

IOE - TRIAD EBBUTT

J-70

Drilling Authority No. 137
Date Issued

WELL NAME IGE T-lad Ebbutt J-70

FIELD Area:
LOCATION: Unit J Section 70 Grid 62-20 - 121-45
Latitude 62-19-31 Longitude 121-57-03
From Established Reference Marker

Rig Release Date:
Status
Information Release Date

CHANGE OF NAME:

DATE RECEIVED	INDEX
	Application for a Drilling Authority. Well Completion Data. Well History Report. Application to Amend a Drilling Authority. Application to change a Well Name. Application to Abandon a Well or Suspend Drilling. Application to Alter Condition of a Well. Well History Supplement. Well Completion Data. Work-over Report No. Application to Commingle Production before Measurement. Data for Back Pressure Test on Natural Gas Wells — Monograph 7 Method. Data for Back Pressure Test on Natural Gas Wells — Vitter's Method. M.P.R. — Oil — Calculations. New Oil Well Report. New Gas Well Report. Well Inspection Report. Rig Inspection Report. Battery Inspection Report. Equipment Report. Well Card. Well Visit. Daily Drilling Reports. Logs. Large scale Small scale

Drilling Authority No. 137
Date Issued Mar. 4, 1964

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
RESOURCES DIVISION

WELL COMPLETION DATA

(To be submitted in duplicate within thirty days after the completion rework, abandonment, recompletion or suspension of every well.)

Well name and number I.O.E. TRIAD EXPLOR J-70

Permit No. P & NG 5542 Lease No. _____

I.O.E., Triad Oil Ltd., Horn R. Exploratory Licence No. 638
(Permitter, Licensee, Lessee) Explor.

Imperial Oil Enterprises Ltd. Exploratory Licence No. 638
(Operator)

Location: Unit J Section 70 Grid 62°20' - 121°45'

Latitude 62°19'N" E. Longitude 121°37'30"

From Established Reference Marker Govt. monument along McKenzie River, also Air Photos.

	DATE	DEPTH
Spudded	Mar. 20/64	
Suspended		
Resumed		
Finished Drilling	Apr. 6/64	2711'
Deepened		
Complete (gas/oil)		
Abandoned	Apr. 8/64	2711'
Rig released	Apr. 8/64	2711'

Pool (s) **H.A.**
Interval(s) open to production **None**

Elevation: Gr. **862**
K.B. **868.5 (869)**

Drilling Contractor & Rig No. **Tri-City Drilling**
Rig #4
Contractor's Licence No. **A-11379**

CASING RECORD

Casing Size (Inches)	Weight	Amount	Set at—	Sacks of Cement	Method
1. Surface 8 5/8"	24#	300	299 K.S.	175	
2.					
3.					
4.					
5.					
6.					

[illegible]

CEMENTING RECORD (Plug, Squeeze, etc.)				PERFORATING RECORD (Bullet, Jet)				SERVICING RECORD (Acidizing, Fracing, etc.)			
Date	From	To	Remarks	Date	From	To	Remarks	Date	From	To	Remarks
April 8/64	2550'	2711'	60 sacks 4 2% CaCl ₂ #1 Plug.								
	2550'	350'	60 " 2% CaCl ₂ #2 " Total 205'								
			Surf. few " Spacks in casing								

DRILL STEM TESTS

No.	Date	Formation	From	To	V.O. Mins.	I.S.I. Mins.	F.S.I. Mins.	ISIB.H.P.	FSIB.H.P.	IFB.H.P.	PFB.H.P.	I.H.P.	F.H.P.	REMARKS
1	28/3/64	Bear Rock	1446	1524	90	90	90	352- 340	330 500	30	117- 87	675	180 675	Rec. 190' muddy water.
2	30/3/64	Bear Rock	1700	1750	60	90	90	120- 107	116 85	5	31 5	765	116 765	Rec. 10' fresh water.
3	6/4/64	Running	2595	2625	60	90	60	1025- 1025	1069 1025	1069 1025	1069 1025	1150	1150	Rec. 2000' watery mud and salt water.

Lab. No.				Sample		From		To		Source		Remarks		PRESENT STATUS OF WELL			
F1901-1, 2				1 to 5		1446		1524		D.S.T. #1				Oil		(Interval)	
F1902-3				?		1700		1750		D.S.T. #2							
Not Received				1 to 5		2595		2625		D.S.T. #3				Gas		(Interval)	
CNP-1-6829						2606		2610- 2625		Core #6				Dry		X Plugged to sup.	
														Susp.			

Imperial Oil Enterprises Ltd.

Company

G.R. Alexander

Signed by

Well-site Supervisor

Title

April 23, 1964

Date

Forms to be prepared in duplicate and forwarded to the
Conservation Engineer, Calgary, Alberta.



DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
RESOURCES DIVISION

Application to Abandon a Well or Suspend Drilling

In compliance with the "Canada Oil and Gas Land Regulations", application is made hereby for approval to abandon, to suspend drilling:—

Name and number of well **IOE Triad Ebbutt 1-70**
Location: Unit **J** Section **70** Grid **62°20'; 121°45'**
Latitude **62°15'N** Longitude **121°57'03"**
From Established Reference Marker

Permit No. **3542** Lease No. _____
Imperial Oil Enterprises Ltd.
(Permitter, Licensee, Lessee)

Date of commencement of proposed programme **April 8, 1964**

OIL, GAS, AND WATER ENCOUNTERED (Depths)

Oil at _____
Gas at _____
Water at _____
Total Depth **2711** Date of last operations **April 8, 1964**
Present condition of well **Abandoned**

CASING RECORD

Casing Size O.D. Inches	Weight	Amount	Set At—	Sack of Cement	Method	Amount Pulled
1. 8-5/8	24	7 Jts.	299.66	175	Mixed and displaced	
2.						
3.						
4.						
5.						

PROPOSED ABANDONMENT PROGRAMME

No.	Plug Position	Geological Formation	Number of Sacks of Cement	Remarks
1	2711 - 2550		60	
2	390 - 250		50 + 2% CaCl₂	
	Cut off surface casing 3' below ground level and run 5 sack plug. Weld steel plate on top. Weld name plate on 1 inch riser.			
	Verbal approval obtained from B.E.J. Thoms, Dept. of Northern Affairs and National Resources, Calgary, Alberta.			

The following logs have been run _____
Other operations proposed **Nil**

Operations to be carried out by **Tri-City Drilling Co. Ltd.** Contractor Licence No. **A-11379**
Address **1405 - 120 St., Edmonton, Alberta.** Address _____
Responsible Agent in field **G. E. Schultis, Trail Bldg., Dawson Creek, B. C.**
Dated at **Dawson Creek, B. C.** this **9** Day of **June** 1964
Signed by **[Signature]** Company **Imperial Oil Enterprises Ltd.**
Title **Division Engineer** Exploratory Licence No. **638**

Note: The Oil Conservation Engineer's office must be notified before work is commenced.

(For RESOURCES DIVISION use only)

APPROVAL

This application has been examined and proposed programme approved, subject to the following conditions:

Confirming oral approval given by Mr. B.E.J. Thoms April 7, 1964.

Dated **17th June 1964**, 19____ **[Signature]**

Forms to be submitted in triplicate to Oil Conservation Engineer, Calgary, Alberta



DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
RESOURCES DIVISION

Application for a Drilling Authority

This notice of intention to begin drilling operations, in triplicate, and where required a plan of survey approved by the Surveyor General showing the target area or the site of the well must be submitted and approved before commencing operations.

In compliance with the "Canada Oil and Gas Land Regulations", application is made hereby for approval to drill:—

Name and number of well **IOE Triad Hbott J-70**
Location: Unit **J** Section **70** Grid **62° 20' - 121° 45'**
Latitude **62° 19' 31"** Longitude **121° 57' 03"**
From Established Reference Marker _____

Elevation: Ground _____ K.B. _____ feet above sea-level.
Well is expected to produce from **Devonian** formation at a depth
of about **1100** feet. **FD 2750**
Area assigned to well _____
(for Oil Conservation Engineer's use only)

Permit No. **3542** Lease No. _____ Acreage **59,640**
Permittee, licensee, or lessee **Imperial Oil Enterprises Ltd., Triad Oil Co. Ltd., Horn River Exploration Ltd.**
Exploratory Licence No. **638**
Surface owned by Crown or **Crown**
(If alienated submit name and address of owner and occupant.)
Petroleum and natural-gas rights owned by **Crown**

We propose to use the following strings of casing, either cementing or landing them as indicated below:—

Casing Size O.D. (Inches)	Weight (Lb./Ft.)	Grade	Brand	New or Used	Estimated Depth	Sacks of Cement
1. 8 5/8	24.0	J55	Seamless	New	275	to surface
2. _____	_____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____	_____

Expected water, gas, and oil horizons and type of control equipment **Surface casing will be set to sufficient depth to control surface waters**

Well will be drilled with (Rotary) Rig No. **4** by **Tri-City Drilling Co. Ltd.**
(C.O.R.C.) (Drilling Contractor or company)

Responsible agent of applicant:— Contractor's Licence No. **A-11379**
At well **G.S. Schultis** At registered office **J.S. Poyen**
Address **Trail Bldg, Dawson Creek B.C.** Address **500 - 6 Avenue S.W. Calgary**
It is understood that if changes become necessary, notice of the change of plan will be submitted.
Dated at **Calgary**, this **4** day of **March**, 19 **64**
Signed by **[Signature]** Company **Imperial Oil Enterprises Ltd.**
Title **Regional Engineer** Licence No. _____
(For Resources Division use only)

APPROVED

This application has been examined and approved subject to the following conditions:—

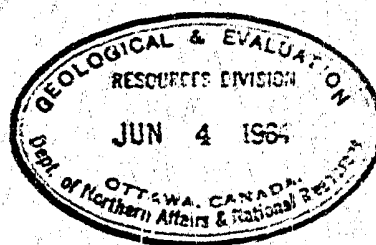
The Company will submit to this office, on Tuesday of each week, the latest reports received by radio on the progress of the well.

Dated **4th March**, 19 **65**

Forms to be submitted to Oil Conservation Engineer, Calgary, Alberta.

J-70 62°20'N 121°45'W

ICE TRIAD EBBUTT J-70



BRITISH COLUMBIA
DEPARTMENT OF MINES AND PETROLEUM RESOURCES
STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OR ANALYSIS OF WATER, OIL OR GAS
(Please supply as much of the following information as possible. Please print).

Operator: **Imperial Oil Enterprises Ltd.**

Mailing address for results: **Trail Building, Dawson Creek, B.C.**

Well name: **I.O.E. TRIAD RESUIT J-70**

Field or Area: **N.W.T.**

Located in: $\frac{1}{4}$ Unit Unit Block NTS **J-70 (Lat. 62°20' - long. 121°45')**

LSD. Sec. Twp. Rge. W Mer. Elev. K.B.
Grd.

Kind of sample (water, oil or gas): **water** Lab Analysis No:

Sampled by: **J. T. Walasko** Representing: **Imperial Oil** Date: **March 28, 1964**

Identification marks on sample container: **D.S.T. #1 (1446' - 1524') Sample #4 from within tool.**

Interval tested: **1446' - 1524'** Formation: **Manetoe**

Perforations or open hole: **5' perforations**

Sampled from (DST; WLT; wellhead; separator; tank; line): **D.S.T. #1**

DST number: **1** Recovery: **190' slightly muddy water**

Part of recovery sampled: **within tool**

Production sample (flowing, pump, swabbing): **No**

Production rate: oil bpd; Gas Mcf/d; Water bpd.

Pressure: Point of sampling psig; Gas bomb psig.

Temperature: Point of sampling **-10 °F**; Separator °F.

Pressure: Reservoir psig; tubing psig; casing psig; Sep. psig.

If water sample, had interval previously been treated with:

(a) Acid: **No**

(b) Aqueous fluid: **No**

REMARKS:

Preliminary NaCl content 86,000 ppm

J. T. Walasko
(Signed)

Imperial Oil Enterprises Ltd.
(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field Well No. I.O.E. Triad Ebbutt #J-70
 Operator Imperial Oil Limited Date Received April 8, 1964
 Formation Depths 1446' - 1524'
 Other pertinent data Location: J-70-62°20' - 121°45', D.S.T. #1. Sample #3.
 10 feet above tool. Recovered 190 feet muddy salt water.

Date Sampled: Not Known Lab. No. F1903-1

PARTS PER MILLION (MILLIGRAMS PER LITER)

	Na + K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	MnS
%	23.07	11.10	0.62		31.77	32.70		0.74		
PPM	1,832	881	49		2,523	2,597		120		

MILLIGRAM EQUIVALENTS

79.70	43.96	4.03		52.48	73.24		1.97		
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MILLIGRAM EQUIVALENTS IN PERCENT

31.21	17.21	1.58		20.55	28.68		0.77		
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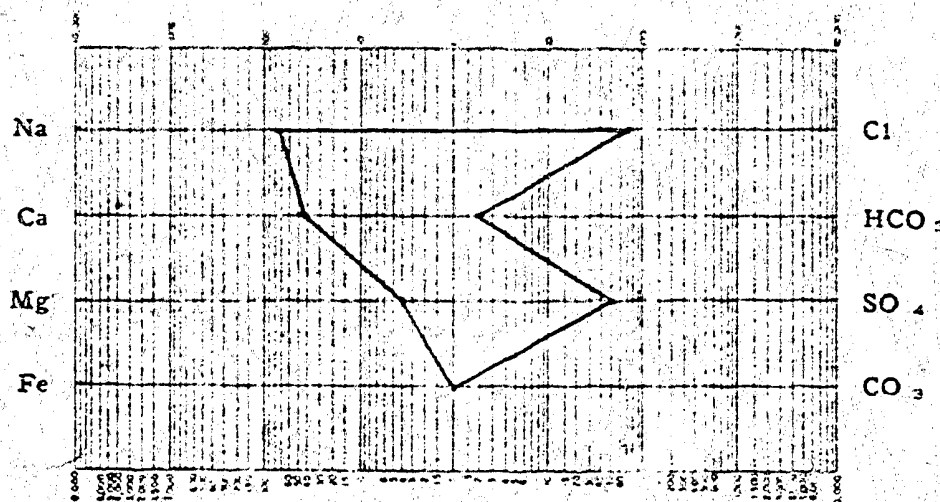
Total Solids in Parts per Million

By evaporation 7,920
 After ignition 7,080
 Calculated 7,941
 Specific Gravity 1.006
 Observed pH 7.5
 Resistivity 1.63 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity 62.42
 Secondary salinity 36.04
 Primary alkalinity ---
 Secondary alkalinity 1.54
 Chloride salinity 58.26
 Sulfate salinity 41.74

Remarks and conclusions

LOGARITHMIC PATTERN
MEQ per unit

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field _____ Well No. I.O.E. Triad Ebbett SJ-70
 Operator Imperial Oil Limited Date Received April 8, 1964
 Formation _____ Depth 1446' - 1524'
 Other pertinent data Location: J-70-62°20' - 121°45'. D.S.T. #1. Sample #4.
 Sample from tool. Recovered 190 feet muddy salt water.

Date Sampled: Not Known Lab. No. F1903-2

PARTS PER MILLION (MILLIGRAMS PER LITER)

	Na + K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
%	26.72	8.62	0.62		22.39	41.15		0.50		
PPM	3,166	1,021	73		2,653	4,876		120		

MILLIGRAM EQUIVALENTS

137.70	50.95	6.00		55.18	137.50		1.97		
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MILLIGRAM EQUIVALENTS IN PERCENT

35.37	13.09	1.54		14.17	35.32		0.51		
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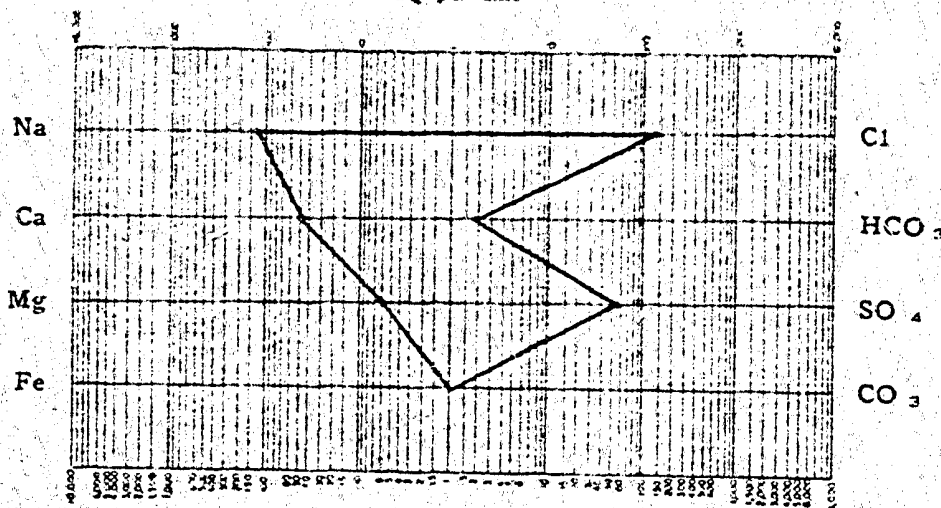
Total Solids in Parts per Million

By evaporation 11,870
 After ignition 10,340
 Calculated 11,848
 Specific Gravity 1.008
 Observed pH 7.5
 Resistivity 0.689 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity 70.74
 Secondary salinity 28.24
 Primary alkalinity ---
 Secondary alkalinity 1.02
 Chloride salinity 71.37
 Sulfate salinity 28.63

Remarks and conclusions

LOGARITHMIC PATTERN
MEQ per unit

BRITISH COLUMBIA
DEPARTMENT OF MINES AND PETROLEUM RESOURCES
STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OR ANALYSIS OF WATER, OIL OR GAS
(Please supply as much of the following information as possible. Please print).

Operator: IMPERIAL OIL ENTERPRISES LTD.
Mailing address for results: Trail Building, Dawson Creek, B.C.
Well name: I.O.E. TRIAD EBBUTT J-70 Field or Area: N.W.T.
Located in: X Unit Unit Block NTS J-70 (Lat. 62°20' - Long. 121°45')
LSD. Sec. Twp. Rge. W Mer. Elev. K.B. Grd.
Kind of sample (water, oil or gas): water Lab Analysis No:
Sampled by: J. T. Walasko Representing: I.O.E. Date: March 30, 1964
Identification marks on sample container: DST #2 (1700' - 1750') Sample #1 from within
Interval tested: 1700' - 1750' Formation: Bear Rock tool.
Perforations or open hole: 5' perforations
Sampled from (DST; WLT; wellhead; separator; tank; line): D.S.T. #2
DST number: 2 Recovery: 10' fresh water drilling fluid
Part of recovery sampled: Within tool
Production sample (flowing, pump, swabbing): D.S.T. #2
Production rate: oil bpd; Gas Mcf/d; Water bpd.
Pressure: Point of sampling psig; Gas bomb psig.
Temperature: Point of sampling °F; Separator °F.
Pressure: Reservoir psig; tubing psig; casing psig; Sep. psig.
If water sample, had interval previously been treated with:
(a) Acid: (b) Aqueous fluid:

REMARKS:

Preliminary salinity 5000 ppm NaCl.

J. T. Walasko
(Signed)

Imperial Oil Enterprises Ltd.
(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field Well No. I.O.E. Triad Ebbutt #J-70
 Operator Imperial Oil Limited Date Received April 8, 1964
 Formation Depths 1700' - 1750'
 Other pertinent data Location: J-70-62°20' - 121°45'. D.S.T. #2. Sample from tool.
 Recovered 16 feet drilling fluid fresh water.

Date Sampled: Not Known Lab. No. F1903-3

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na + K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	Hard
9.07	19.55	1.98		58.59	9.09		1.72		
390	841	85		2,520	391		150		

MILLIGRAM EQUIVALENTS

16.95	41.97	6.99		52.42	11.03		2.46		
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MILLIGRAM EQUIVALENTS IN PERCENT

21.86	31.84	5.30		39.77	8.37		1.86		
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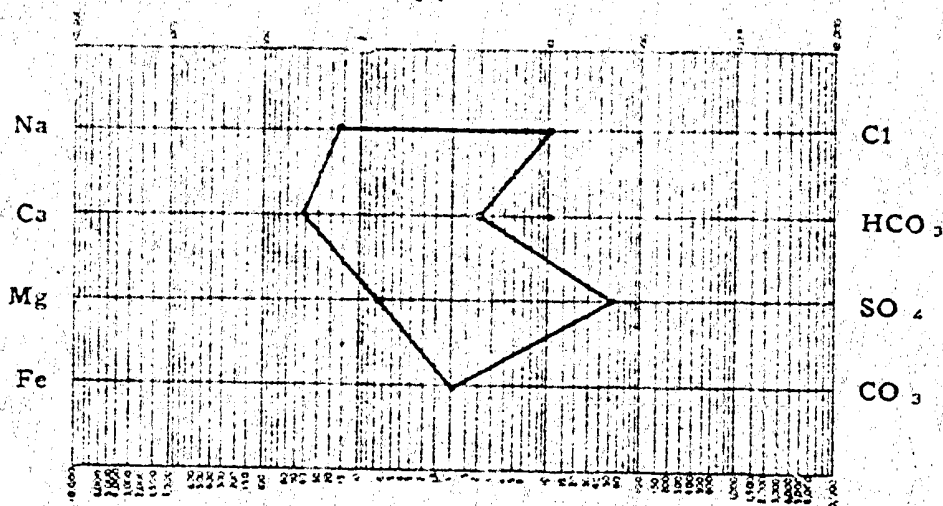
Total Solids in Parts per Million

By evaporation 5,024
 After ignition 4,028
 Calculated 4,301
 Specific Gravity 1.004
 Observed pH 7.7
 Resistivity 2.18 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity 25.72
 Secondary salinity 70.56
 Primary alkalinity ---
 Secondary alkalinity 3.72
 Chloride salinity 17.39
 Sulfate salinity 82.61

Remarks and conclusions

LOGARITHMIC PATTERN
MEQ per unit

U. S. A.
BRIEFING COLUMBIA
DEPARTMENT OF MINES AND PETROLEUM RESOURCES
STANDARD CUFF INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OR ANALYSIS OF WATER, OIL OR GAS
(Please supply as much of the following information as possible. Please print).

Operator: Imperial Oil Enterprises Ltd.

Mailing address for results: Trail building, Attention: G.R.A. Milne

Well name: ICE TRIAD BRUFT J-70

Field or Area: U.S.T.

Located in: K Unit Unit Block NTS J-70 (60°00' - 121°00')

LSD. Sec. Twp. Rce. W. Mer. Elev. 488.9' K.B.
802' Grd.

Kind of sample (water, oil or gas): water Lab Analysis No:

Sampled by: Zederavko

Representing: I.O.S.

Date: April 6, 1964

Identification marks on sample container: ICE TRIAD BRUFT J-70 DST #3 Samples 1 to 5

Interval tested: 2050' - 2070' Formation: Bonning

Perforations or open hole: Open hole

Sampled from (DST; JLT; wellhead; separator; tank line): U.S.T.

DST number: 4 Recovery: 1000' fluid; 500' muddy water; 1510' salt water

Part of recovery sampled: See remarks

Production sample (flowing, pump, swabbing):

Production rate: oil bpd; Gas Mcf/d; Water NA bpd.

Pressure: Point of sampling NA psig; Gas bomb psig.

Temperature: Point of sampling 58 °F; Separator °F.

Pressure: Reservoir 1025 psig; tubing psig; casing psig; Sep. psig.

If water sample, had interval previously been treated with:

(a) Acid: (b) Aqueous fluid: water, native mud.

REMARKS:

DST #3 - samples

Sample #1 - mud (water) before test.

2 - 2050' above tool

3 - 1400' above tool

4 - 700' above tool

5 - 0' above tool

E. Zederavko
(Signed)

Imperial Oil Enterprises Ltd.
(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field (Wildcat), North West Territories Well No. I.O.E. Triad Ebbutt #J-70-62°

Operator Imperial Oil Limited

20' - 121° 45' April 23, 1964

Formation

Depths

Other pertinent data Sample #1. D.S.T. #3. Mud before test.

Date Sampled: Not Known Lab. No. F1918-1

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na + K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	MnS
9.29	18.45	2.48		61.41	5.27		3.10		
363	721	97		2400	206		245		

MILLIGRAM EQUIVALENTS

15.80	35.98	7.97		49.92	5.81		4.02		
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MILLIGRAM EQUIVALENTS IN PERCENT

13.22	30.11	6.67		41.77	4.86		3.37		
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Total Solids in Parts per Million

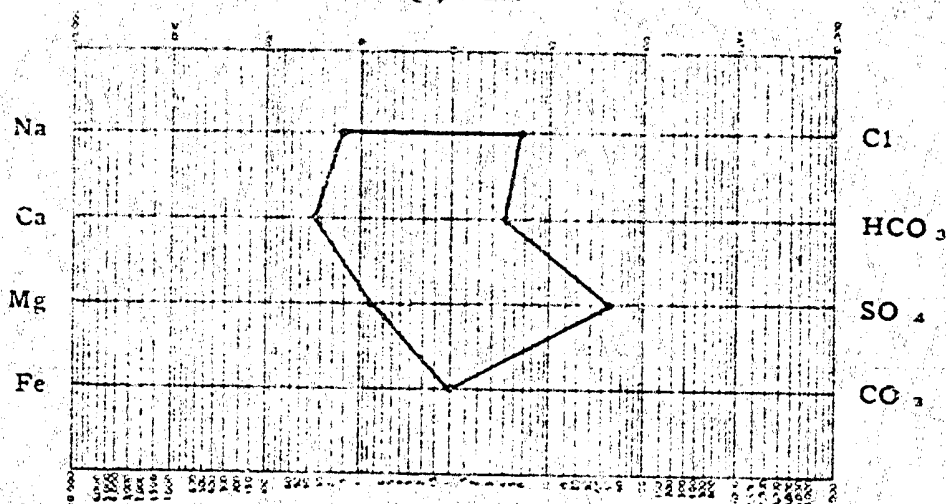
By evaporation	4,600
After ignition	3,740
Calculated	3,908
Specific Gravity	1.006
Observed pH	7.8
Resistivity 2.63	ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity	26.44
Secondary salinity	66.82
Primary alkalinity	---
Secondary alkalinity	6.74
Chloride salinity	10.42
Sulfate salinity	89.58

Remarks and conclusions This sample is fresh water.

LOGARITHMIC PATTERN MEQ per unit



CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field (Wildcat), North West Territories Well No. I.O.E. Triad Ebbutt #J-70-62°
 Operator Imperial Oil Limited Date Received April 23, 1964
 Formation Depths
 Other pertinent data D.S.T. #3. Sample #2. Top of fluid.

Date Sampled: Not Known Lab. No. F1918-2

PARTS PER MILLION (MILLIGRAMS PER LITER)

	Na + K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	MnS
36.30	2.01	0.17		3.64	57.61			0.07		
50796	2804	243		5063	80184			185		

MILLIGRAM EQUIVALENTS

2209.64	139.92	19.97		105.31	2261.19			3.03		
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MILLIGRAM EQUIVALENTS IN PERCENT

46.63	2.95	0.42		2.22	47.72			0.06		
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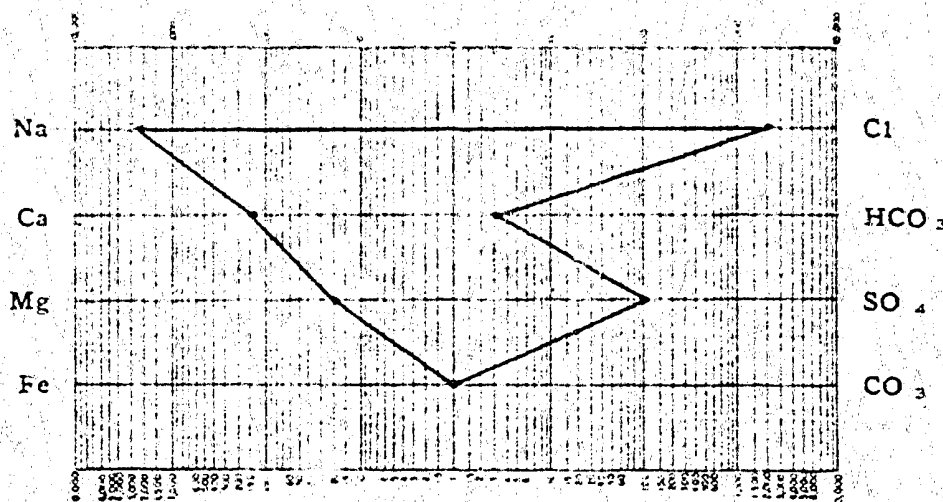
Total Solids in Parts per Million

By evaporation	150,770
After ignition	127,970
Calculated	139,181
Specific Gravity	1.090
Observed pH	7.4
Resistivity	0.084
	ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity	93.26
Secondary salinity	6.62
Primary alkalinity	---
Secondary alkalinity	0.12
Chloride salinity	95.55
Sulfate salinity	4.45

Remarks and conclusions This sample appears to be a diluted formation water.

LOGARITHMIC PATTERN
MEQ per unit

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field (Wildcat), Northwest Territories Well No. I.O.E. Triled Ebbutt #J-70-62°-20°-121°-45°
 Operator Imperial Oil Limited Date Received April 23, 1964
 Formation Depths
 Other pertinent data D.S.I. #3. Sample #3. 1/3 down in fluid.

Date Sampled: Not Known Lab. No. F1918-3

PARTS PER MILLION (MILLIGRAMS PER LITER)

	Na + K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	NaS
%	37.76	0.94	0.24		1.76	59.27		0.03		
PPM	96,947	2,403	608	Present	4,520	152,144		185		

MILLIGRAM EQUIVALENTS

4217.21	119.91	49.98		94.02	4290.05		3.03			
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MILLIGRAM EQUIVALENTS IN PERCENT

48.06	1.37	0.57		1.07	48.89		0.04			
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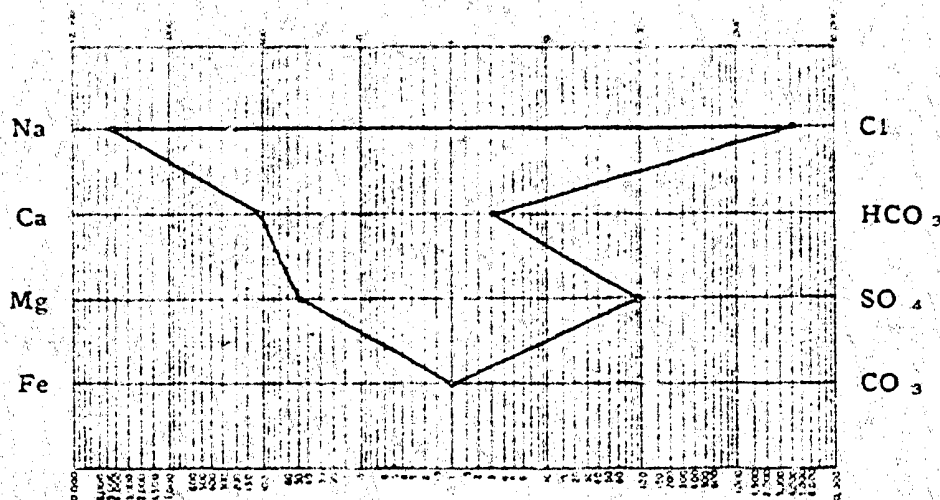
Total Solids in Parts per Million

By evaporation	294,800
After ignition	240,360
Calculated	256,713
Specific Gravity	1.158
Observed pH	7.0
Resistivity 0.060	ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity	96.12
Secondary salinity	3.80
Primary alkalinity	—
Secondary alkalinity	0.08
Chloride salinity	97.86
Sulfate salinity	2.14

Remarks and conclusions This sample appears to be a slightly diluted formation water.

LOGARITHMIC PATTERN
MEQ per unit

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field (Wildcat), Northwest Territories Well No. I.O.E. Fried Ebbutt #J-70-62°20'-121°45'

Operator Imperial Oil Limited

Date Received April 23, 1964

Formation

Depths

Other pertinent data D.S.I. #3, Sample #4. 2/3 down in fluid.

Date Sampled: Not Known Lab. No. F1918-4

PARTS PER MILLION (MILLIGRAMS PER LITER)

	Na + K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
%	37.85	0.89	0.23		1.61	59.39		0.03		
PPM	102,200	2,403	608	Present	4,362	160,368		150		

MILLIGRAM EQUIVALENTS

4445.68	119.91	49.98		90.73	4522.38		2.46			
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MILLIGRAM EQUIVALENTS IN PERCENT

48.16	1.30	0.54		0.98	48.99		0.03			
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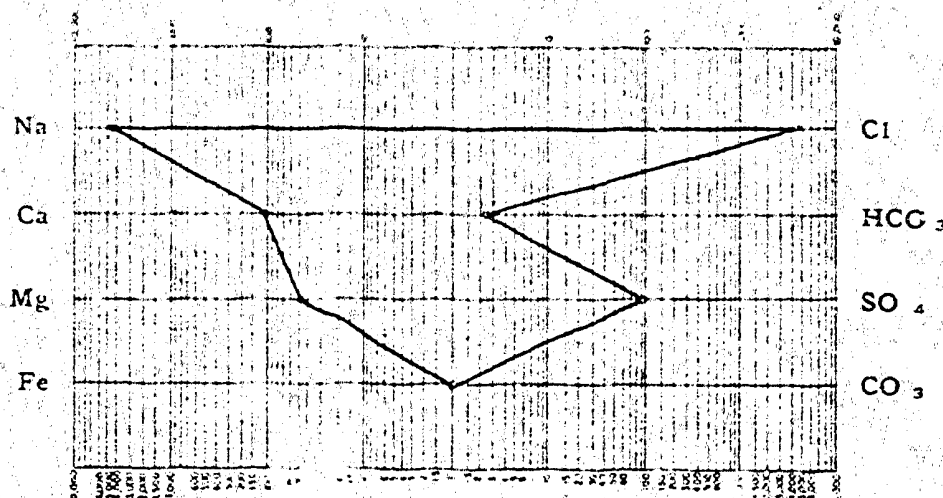
Total Solids in Parts per Million

By evaporation	314,760
After ignition	250,020
Calculated	270,015
Specific Gravity	1.166
Observed pH	6.9
Resistivity	0.059 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity	96.32
Secondary salinity	3.62
Primary alkalinity	---
Secondary alkalinity	0.06
Chloride salinity	98.04
Sulfate salinity	1.96

Remarks and conclusions This sample appears to be formation water.

LOGARITHMIC PATTERN
MEQ per unit

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St John

Calgary

WATER ANALYSIS REPORT

Field (Wildcat), Northwest Territories Well No. I.O.E. Triad Ebbutt #J-70-62°20'-121°45'
 Operator Imperial Oil Limited Date Received April 23, 1964
 Formation Depth
 Other pertinent data D.S.T. #3, Sample #5, Top of tool.

Date Sampled: Not Known Lab. No. F1918-5

PARTS PER MILLION (MILLIGRAMS PER LITER)

	Na + K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	MnS
%	37.87	0.89	0.23		1.42	59.57		0.02		
PPM	101,936	2,403	608	Present	3,827	160,368		130		

MILLIGRAM EQUIVALENTS

4434.22	119.91	49.98		79.60	4522.38		2.13		
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MILLIGRAM EQUIVALENTS IN PERCENT

48.16	1.30	0.54		0.87	49.11		0.02		
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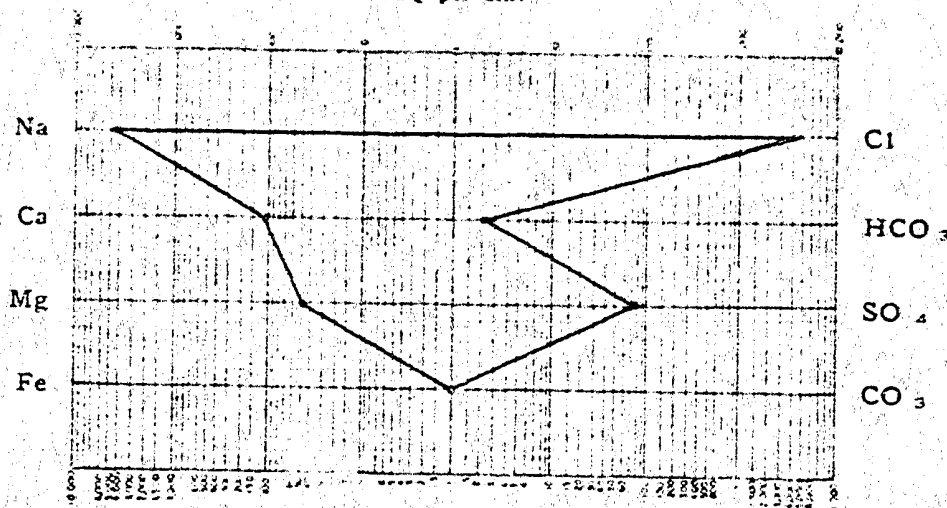
Total Solids in Parts per Million

By evaporation	314,480
After ignition	252,100
Calculated	269,206
Specific Gravity	1.166
Observed pH	6.5
Resistivity	0.058 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity	96.32
Secondary salinity	3.64
Primary alkalinity	---
Secondary alkalinity	0.04
Chloride salinity	98.26
Sulfate salinity	1.74

Remarks and conclusions This sample appears to be formation water.

LOGARITHMIC PATTERN
MEQ per unit

CORE ANALYSIS CODE KEY

I Permeability (md) Columns F, G, H

Code

- (a) when K_{max} , and K_H are measured
- (r) when K_{radial} is measured
- (h) when a single horizontal K is measured

II Plug Quality (Column N)

Code Condition (Subcolumn 1)

- 1 - Fractured
- 2 - Missing (includes cement plugs)
- 3 - Broken or unconsolidated
- 4 - Uncored
- 5 - Portion of core not analyzed

Texture (Subcolumn 2)

- 1 - Dense

Interpretation (Subcolumn 3)

- 1 - Same as
- 2 - Interpreted Value (editing stage)
- 3 - Assigned footage
- 4 - Interpreted Values for footage, permeability, porosity and lithology

III Plug Type (Column O)

Code

- 1 - Full diameter (includes 4 3/8", 3 1/2", 2 5/8", 2 3/4" diameter)
- 2 - Slim hole (less than 2 1/2" diameter)
- 3 - Cubes - any size
- 4 - Horizontal test plugs - any size
- 5 - Vertical test plugs - any size
- 6 - Test plugs - all sizes - undifferentiated position
- 7 - Unconsolidated technique
- 8 - Combined plugs - full diameter, plus cubes test plugs, etc...
- 9 - All measurements except vertical permeability on horizontal test plugs, Vertical permeability taken on vertical test plugs
- 10 - Horizontal permeabilities run on small diameter plugs (other meas. full diameter)
- 11 - Full diameter (glazed surface removed)

COPE LABORATORIES-CANADA LTD.
CALGARY ALBERTA

KEY TO DESCRIPTION OF CARBONATE SAMPLE

ROCK POROSITY

- | | |
|-----------------|-----------------|
| (A) Large Vugs | (6) Shales |
| (B) Vugs | (7) Iron Stains |
| (C) Cracks | (8) Pyrites |
| (D) Fine Pores | (9) Sand Grains |
| (E) Impermeable | (10) Hard |

CHARACTER OF ROCK

- | | |
|----------------|------------------|
| (1) Dark Grey | (11) Medium |
| (2) Grey | (12) Soft |
| (3) Light Grey | (13) Oil Stains |
| (4) White | (14) Pyrobitumin |
| (5) Anhydrite | (15) Stylolites |

G. Glazed surface removed

CORE LABORATORIES-CANADA LTD.
CALGARY ALBERTA

Company - IMPERIAL OIL LIMITED
Well - IOE TRIAD EBBUTT J-70
Field - FORT SIMPSON AREA
Province - NORTHWEST TERRITORIES

Date Report - APRIL 22, 1964
Location - 62° 20' - 121° 45'
Analysis - FULL DIAMETER
D. Fluid - WATER BASE MUD

Page - 1 of 1
File - CNP-1-6829
Analysts - NC:SM
Remarks - 3 1/2" CORE

Plug No. (Card Field)	Interval Represented		Permeability (md)		Porosity		Density		Con-		Plug Quality N		Inter- Plug	
	Top	Base	Thick	Maximum	90°	Vertical	H	I	J	K	(1)	(2)	(3)	0

CORE NO. 6 2606' - 2625' (Rec. 18.0')

1	2606.0	2606.4	0.4	0.25	0.15	0.04		3.1	2.7	2.79				A,B,C,D,3,5,11
2	2606.4	2607.1	0.7	>30,000.	26,700.	128.		12.1	2.42	2.75				A,3,11
3	2607.1	2607.8	0.7	>30,000.	171.	0.34		17.7	2.26	2.74				A,3,11
4	2607.8	2608.3	0.5	>30,000.	0.34	>30,000.		11.0	2.47	2.77				A,B,3,11
5	2608.3	2608.9	0.6	2.0	0.24	<0.01		5.4	2.64	2.79				A,B,3,11,15
6	2608.9	2609.6	0.7	0.31	<0.01	<0.01		1.4	2.77	2.81				B,D,3,5,11,15
7	2609.6	2610.4	0.8	0.23	0.23	<0.01		1.8	2.74	2.79				B,D,3,5,11,15
-	2610.4	2624.0	13.6	-	-	-		-	-	-				Not received
-	2624.0	2625.0	1.0	-	-	-		-	-	-				Lost core

I.O.E. TRIAD SEBUTT J-70

J-70 (62°20'-121°45')

LITHOLOGICAL DESCRIPTION

K.B. 868.5'

- 6' - 45' : Glacial drift, unconsolidated. Sands and gravels of granitic and dolomite rock fragments. Shale, medium grey. Slightly carbonaceous.
- 45' - 910' : Shale, medium grey-green, slightly micritic, slightly silty, minor hard, quartz sandstone interbeds of probable turbidite origin. Shale is moderately indurated, blocky split, subfissile, micromicaceous.
- 910' - 1028' : Shale, very dark grey, fissile, slightly siliceous, pyritic, becomes increasingly dolomitic with depth. Grades into and is interbedded with the shales at the overlying Imperial Formation.
- 1028' - 1075' : Limestone, very dark brown grey, micritic, dolomitic, argillaceous, very thin very dark grey shale interbeds.
- 1075' - 1120' : Limestone, medium brown grey, micritic skeletal, lime mud matrix partly recrystallized, skeletal content is comminuted thin brach shells, ostracods, crinoid columnals, stroms with coarse cell structure. Trace bitumen along stylolites. Tight.
- 1120' - 1240' : Limestone, light to dark brown grey, skeletal micritic with minor interbeds of microcrystalline dolomite, lime mud matrix partly dolomitized, trace argillaceous. Tight.
- 1240' - 1380' : Limestone, light brown grey to medium brown grey, micritic pellet and pellet micritic skeletal is ostracods and crinoids, dolomite is disseminated and concentrated along stylolites, minor microcrystalline dolomite interbeds, tight.
- 1380' - 1516' : Dolomite, light brown grey, microcrystalline to minor micritic sized dolomite, trace relict tabulate corals, common dead oil stain, poor intercrystalline and poor organic porosity. Originally resolid in part. Some pellet limestone interbeds.
- 1516' - 1685' : Anhydrite, light grey and light brown, slightly dolomitic, minor interbeds of micritic sized dolomite with coarse dark brown anhydrite plugging. Anhydrite is massive with little to suggest original textures. Tight.

- 1635' - 1780': Dolomite, light grey, microcrystalline to micritic sized, dead oil stain and poor intercrystalline and organic porosity.
- 1780' - 2180': Anhydrite, light greyish brown, dolomitic in part with traces clear secondary anhydrite, traces selenite healed fractures, with minor bituminous layers vague brecciated appearance. Tight.
- 2180' - 2430': Shale, pale olive green 5% at top. Dolomite, medium greyish brown and mottled white, finely crystalline with secondary, clear selenite plugging original porosity, trace pyrobitumen and Anhydrite, light grey brown and buff with white mottling, vague brecciated structure, bituminous bands. Tight.
- 2430' - 2490': Dolomite, cream and very light grey, crypto to microcrystalline scattered traces selenite, scattered vug plugged with selenite. Tight.
- 2490' - 2560': Dolomite, buff, fine to very finely crystalline, interbedded with crypto crystalline, creamy colored and light grey brown dolomite with greyish white chert toward base. Traces intercrystalline porosity.
- 2560' - 2711': Dolomite, finely microcrystalline, light grey to grey brown and greyish black where argillaceous, minor cryptocrystalline, chert as blebs and bands, possibly vug infillings chert absent below 2630', up to 15% secondary white dolomite from 2600' down. Argillaceous bands at 2570 - 2590; 2630 - 2690; 2680 - 2711. Porosity plugged with pyrobitumen, at 2560 - 70, good vug porosity at 2609 - 12, 2626 - 2632. Scattered traces intercrystalline porosity throughout.

— E. E. Zederayko —

Geologist

EEZ:sg

I.O.E. TRIAD EBBUTT J-70

J-70 (62°20' - 121°45')

CORE DESCRIPTION

DIAMOND CORE #1

1030' - 1052'

Recovered 22'/22'

1030' - 1033' : Limestone, dark brown grey, pyrite disseminated, dolomite and calcite fill microfractures. Some pyritic shale interbeds.

1033' - 1052' : Limestone, dark brown grey, slightly argillaceous, brachiopods. Irregular fractures filled with white dolomite.

DIAMOND CORE #2

1052' - 1059'

Recovered 7'/7'

1052' - 1059' : Dolomite, dark brown grey, tight, argillaceous.

DIAMOND CORE #3

1059' - 1076'

Recovered 17'/17'

1059' - 1075' : Limestone, dark brown grey, argillaceous, cherty.

1075' - 1076' : Limestone, medium to dark brown grey, dolomitic.

DIAMOND CORE #4

1260' - 1285'

Recovered 25'/25'

1260' - 1268.5' : Limestone, very light brown grey, minor argillaceous partings.

1268.5' - 1269' : Dolomite, medium brown grey, very fine to microcrystalline.

1269' - 1281.5' : Limestone, very light brown grey, micritic.

1281.5' - 1282' : Dolomite, medium brown grey, microcrystalline to very fine crystalline, argillaceous.

1282' - 1285' : Limestone, very light brown grey, micritic.

-- J. T. Walasko --

Geologist

April, 1964
Dawson Creek, B.C.

I.O.E. TRIAD KENNETT J-70

J-70 (62°20'-121°45')

CORE DESCRIPTION

CORE #5

2464' - 2474'

Recovered 10'/10'

2464' - 2474': Dolomite, cryptocrystalline, very light gray, traces of argillaceous material and traces of quartz euhedra. Traces of isolated vugs. Tight.

— H. F. Sproule —

Geologist

HFS:sg

May, 1964

Dawson Creek, B.C.

I.G.E. TRIAD EBBUTT J-70

J-70 (62°20' - 121°45')

CORE DESCRIPTION

CORE #6

2606' to 2625'

Recovered 18'/19'

2606' - 2625': Dolomite, greyish brown, finely microcrystalline, 15% coarse secondary white dolomite, infilling vugs, 15% chert. Excellent vug and fracture porosity 2609' to 2612'. Chert decreasing toward base.

-- E. E. Zederayko --

Geologist

EEZ:sg

April, 1964
Dawson Creek, B.C.

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well I.O.E. TRIAD EBBUTT J-70

Location 62°20' - 122°45' Elev 868.5' K.B.
862' GND.

District Peace River

Week Ending March 25, 1964 Report No. 1

DATE	TOTAL DEPTH	PROGRESS	DAYS	REMARKS
Mar. 20	41'	41'	1	Mixing mud and work on pumps at 8:00 A.M. <u>SPUDDER IN 2:30 A.M. MARCH 20, 1964.</u> Mud: Visc. 34 Additives: gel 1400 lbs.; caustic 100 lbs. Bit #1A, type YT-3, 12 1/2", rerun, drilled 40' in 3 hours, tripped at 40'.
Mar. 21	310'	269'	2	Clean out trip and prepare to run casing. Mud: Visc. 80 Additives: caustic 100 lbs. Surveys: 70' - 1 1/2°; 160' - 1/2°; 100' - 1/2° 220' - 1/2°; 310' - 1° Bit #2A, type YT-3, 12 1/2", serial #EN3293, drilled 90' in 12 1/2 hrs. tripped at 130'. Bit #3A, type YT-3, 12 1/2", serial #EN3292, drilled 180' in 7 1/2 hrs., tripped at 310'.
Mar. 22	310'	0'	3	W.O.C. Ran 7 joints, 290.66' of 8 5/8", J-55, 24#, 8 thd. S thd., R-3 Mannesmann surface casing cemented with 175 sacks plus 2% CaCl ₂ . Landed at 299.66' K.B. Plug down 2:30 P.M. March 21, 1964.
Mar. 23	592'	282'	4	Drilling Mud: Visc. 28; Wt. 8.6 Additives: bicarbonate 500 lbs. Survey: Sureshot 460' - 2° 522' - 2 1/2° 553' - 2 1/2° Lithology: 6' - 45': Unconsolidated glacial drift; sands, gravels, shales. 45' - 420': Shales, grey green.
Mar. 24	1012'	420'	5	Drilling Mud: Visc. 30; Wt. 9.7 Surveys: 646' - 1 1/2°; 773' - 1 1/2°; 832' - 1°; 893' - 1/2° Bit #3, 6 1/2", type OSC-1G, serial #5820, tripped at 646', drilled 336' in 14 1/2 hrs. Bit #4, 6 1/2", type OSC, serial #2392, tripped at 986', drilled 340' in 15 1/2 hrs.

Cont'd.

WEEKLY CHRONOLOGICAL WELL REPORTWell: LAKE TRINITY 2-20Location: 62°30' - 121°45' S 68°5' E, 11.0District: Paria RiverWeek Ending: March 25, 1964 Report No. 1

DATE	TOTAL DEPTH	PROGRESS	DAYS	REMARKS
March 25	1071'	61'	6	Drilling. Mud: Visc. 28; Wt. 9.0 Drilling with water. Bit #5, 6", type OSC, serial 48491, tripped at 1040', drilled 44' in 3 hrs. Core #1 (1071' - 1067') recovered 21'/22' Core #2 (1067' - 1060') recovered 7'/7' <u>Lithology:</u> Core #1: Limestone, dark brown grey, micritic, argillaceous, dolomitic. Core #2: Limestone, dark brown grey, micritic, argillaceous, dolomitic. Core #3: Limestone, medium to dark brown grey, micritic, dolomitic, argillaceous, few black shale interbeds. Core #4 (1060' - 1070') Recovered 17'/17'
REPORT NO. 2				FOR DECK ANDING APRIL 1, 1964
March 26	1210'	137'	7	Drilling. Mud: Visc. 25; Wt. 9.1 Drilling with water. Bit #6, diamond core head, 6 11/16", serial #EC2401, tripped out at 1076', cored 45' in 16.5 hrs. Bit #5, rerun, type OSC, serial 84491, tripped at 1155', drilled 103' in 9.5 hrs. Bit #7, 6", type OGV, serial 48283, tripped at 1145', drilled 0' in 4 1/2 hrs. reamed 30' bore hole.
March 27	1390'	180'	8	Drilling. Mud: Visc. 28; Wt. 8.9 Drilling with water. Survey: 1229' - 1230' Core #4 1260' - 1285' recovered 25'/25' <u>Lithology of Core #4:</u>-limestone, micritic, very light brown grey, very thin interbeds of dark grey shale and minor interbeds of medium brown, argillaceous dolomite, light. Bit #3, 6", type O4C, serial #47728, tripped at 1260', drilled 125' in 9 1/2 hrs. Bit #6, rerun, diamond, 6 11/16", serial #EC2401, tripped at 1285', cut 25' of core in 6 1/2 hrs.

WEEKLY CHRONOLOGICAL WELL REPORT

Well 105 TRILS BRATT J-70

Location 62°20' - 121°45' Elev. 866.5' K.S.

District Peace River

Week Ending April 1/64

Report No. 2

DATE	TOTAL DEPTH	PROGRESS	DAYS	REMARKS
March 28	1524'	144'	9	Running to drill ahead. Mud: Visc. 29; at. 9.0; pH 7.6 Bit 79, 6", type OWC, serial #47739, tripped at 1482', drilled 167' in 12 1/4 hrs. Bit 80, 6", type OWC, 5", serial #6503, tripped at 1524', drilled 72' in 6 1/2 hrs. B.H.T. 1-1446' - 1524' recovered 130' of slightly muddy salty water. <u>Bottom Bomb</u> ISI. 90 IMP. 203 FIPP. 23 VL. 90 1st IFF. 8 FFFP. 102 FCI. 90 1st FFP. 10 FSIP. 557 1st SIP. 557 FIP. 703 B.H.T. 32° F.
March 29	1761'	257'	10	Drilling ahead with water. Mud: Visc. 28; at. 8.9 Surveys: 1635' - 7° Bit 81, 6", type OWC, serial #47725, tripped at 1700', drilled 176' in 14 1/2 hrs.
March 30	1911'	130'	11	Running in to drill ahead. B.H.T. 1200' - 1750', recovered 10' of drilling fluid. <u>Bottom Bomb</u> ISI. 90 IMP. 205 FIPP. 5 VL. 60 1st IFF. 8 FFFP. 5 FCI. 90 1st FFP. 8 FSIP. 101 1st SIP. 120 FIP. 800 B.H.T. 85° F. Conventional Straddle Test.
March 31	2109'	198'	12	Drilling with water. Hole condition - good. Samples - good, began lagging samples 1 min/100' at 2100'. Meadow Lake, if penetrated, was not recognized; lithology still anhydrite with minor cryptocrystalline dolomite typical of Bear Rock (Chinchaga) evaporites here.
April 1	2323'	214'	13	Drilling with water. Hole condition - good Samples - fair to good Lithology: Anhydrite, light brown, minor cryptocrystalline dolomite.

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well IOB TRIAD EBBUTT J-20

Location 60°20' - 121°45' Elev 868.5' KB.

District Peace River

Week Ending March 31/64 Report No. 2

DATE	TOTAL DEPTH	PROGRESS	DAYS	REMARKS
April 1 (Cont'd.)				High yesterday of 35°F. with some melting. Temp. 15°F. cloudy today. Rig motor broke down 10:00 A.M. will be u/s for 24 hours or more.
REPORT NO. <u>3</u>				FOR WEEK ENDING <u>APRIL 6, 1964</u>
April 2	2320'	Nil	14	High Parts. Temp. at 12 noon 35° F., in sun 45° F. clear sky.
April 3	2461'	141'	15	Drilling with water. Temp. 35° F. air Hole condition - good Samples - good Drilling in anhydrite Diamond 5 2464' - 2474' Rec. 10'/10' Dolomite, light grey to light grey brown, cryptocrystalline, occasional shale partings along stylolitic surfaces, scattered very fine selenite crystals in part; dense, <u>tight.</u>
April 4	2550'	89'	16	Drilling with water. Samples - good Hole condition - good Temp. 0° 2430': Base massive anhydrite. 2430' - 2490': Dolomite, very light grey and light grey brown, crypto to micro- crystalline. 2490' - 2500': Dolomite, light grey brown, very fine crystalline, <u>tight.</u> 2500' - 2520': Dolomite, very light grey, light grey brown, crypto - micro crystal- line. 2520' - 2540': Dolomite, as above with up to 20% white chert interbeds.
April 5	2606'	56'	17	Tripping Hole condition - slightly undergauge in last 50', otherwise good. Samples - good except for brief poor quality where rotation speeded up to improve progress
				-- H. F. Sproule -- Geologist

WEEKLY CHRONOLOGICAL WELL REPORT

Well I.O.E. TRIAD EBBUTT J-70

Location 62°20' - 121°45' Elev 868.5' KB.
862' GRD.

District Peace River

Week Ending April 6/64 Report No 3

Date	Total Depth	Progress	Days	REMARKS
April 6	2625'	19'	18	8:00 A.M. Tripping out DST #3. Cut Diamond Core #6, 2606' - 2625' with 6 11/16" diamond bit serial #EC2401. Recovered 18'/19' Dolomite, microcrystalline porosity from 2611' - 2614' good vuggy. Lose 40 bbls. mud while coring. Run DST #3 2595' to 2695'. Recovered 2050' fluid; 540' mud colored salt water, 1510' salt water. Mud: Visc. 28; Wt. 8.6
REPORT NO. <u>4</u> FOR WEEK ENDING <u>APRIL 13, 1964</u>				
April 7	2711'	86'	19	8:00 A.M. Logging with Schlumberger. Drill 6 1/2" hole 2625' to 2711' with bit #23, type W7R, serial #57298. Trip and rig to log. Schlumberger logging.
April 8	2711'	0'	20	8:00 A.M. Waiting on cement. Tear out rotary tools. Finish running logs 10:30 P.M. April 17. I.E.S., Gamma Ray Sonic-Caliper. Run Plug #1 2550' - 2711' cemented with 60 sacks + 1% CaCl ₂ . Plug down 2:05 A.M. April 8, 1964. Run Plug #2 250' to 350', cemented with 60 sacks + 2% CaCl ₂ . Plug down 4:00 A.M. April 8, 1964. W.O.C.
April 9	2711'	0'	21	8:00 A.M. Moving out rotary tools. Run Plug #3, cemented with 5 sacks at surface. Cut casing 3' below ground, weld plate and identification plate. <u>RIG RELEASED 3:00 P.M. APRIL 8, 1964.</u>
				-- E. E. Zederayko -- Geologist

WELL SUMMARY

Well Name: I.O.E. Triad Ebbutt J-70
Location: 62°19'31"N. 121°57'03"W. Grid: J-70 (62°20' - 121°45')
Lease: N.W.T. Crown P & NG Permit #3542
Elevations: Grd.: 862' K.B.: 868.5'
Classification: New Field Wildcat
Operator: Imperial Oil Enterprises Ltd.
Spudded: March 20, 1964
Rig Released: April 8, 1964
Final Total Depth: 2711' Driller 2704' Schlumberger
Status: Dry and Abandoned
Contractor: Tri City Drilling (Rig #4)
Casing: 8 5/8" x 290.66' C-175
Perforations: Nil 299.66'

<u>Formation Tops:</u>	<u>Sample</u>	<u>E-log</u>	<u>Elev. E-log</u>
DEVONIAN			
Imperial Fm.	39'		+ 824'
Canol Hare Indian Fm.	910'	961'	- 92'
Hume Fm.	1028'	1030'	- 161'
Bear Rock Fm.		1380'	- 511'
RONNING GROUP	2490'	2490'	-1621'
Final Total Depth	2711'	2704'	-1842'

Cores:

#1	1030-1052	Rec. 22'
#2	1052-1059	" 7'
#3	1059-1076	" 17'
#4	1260-1285	" 25'
#5	2464-2474	" 10'
#6	2606-2625	" 18'

Drill Stem Tests:

#1	1446-1524. VO 90. SI 90 & 90. Rec. 190' muddy water. BHT 82°. HP 675-675. FP 10-87. SIP 540-557.
#2	1700-1750. VO 60. SI 90 & 90. Rec. 10' fresh water (drilling fluid). BHT 85°. HP 705-785. FP 8-5. SIP 120-85.
#3	2595-2625. VO 60. SI 90 & 60. Rec. 2050' fluid, 540' mud colored water, 1510' salt water (200,000 ppm NaCl). BHT 88°. HP 1150-1150. FP 1025-1025. SIP 1025-1025.

Logs:

Run No. 1	Induction-Electrical	2703-299
" 1	Gamma Sonic Ray Caliper	2696-100
" 1	Laterolog-Cond.	2696-299
" 1	Seismic Reference Survey	2696-299

Abandonment Plugs:

#1	2550-2711. C-50 + 2% CaCl ₂ .
#2	250-350 C-60 " " Fall @ 208'
#3	5 sacks and welded plate 3' blow surface.

Above pressures are field pressures. See Testing Reports for corrected pressures.

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

D R I L L S T E M T E S T R E P O R T #1

Well Name. IOE TRIAD HBBUTT J-70.....Formation. Manetoe-Bear Rock.....Date. March 28, 1964

Location.....Lat. 67°20' - Long. 121°45'.....Interval tested from 1446' to 1524'

Basis for test. Poor intercrystalline and vugular porosity stained with dead oil.

Results. 190 feet of slightly muddy salt water.

TESTING DATA

Well Depth. 1524'.....Full Hole Size. 6 1/4".....Drill Pipe: OD. 5 1/4".....Weight. 13.30

Grade.....Joint Type. IF.....Capacity.....

Rat Hole Top. Nil.....Rat Hole Size.....Drill Collars: OD. 4 1/4".....Feet. 300.02

Joint Type.....Capacity.....

Size Top Choke. None.....Size Bottom Choke. 1 1/2"

Packer Type. B.T. & Conventional No. of Packers. 2.....Packer Size. 5 1/4"

Bomb Type. T.....No. of Bombs. 2.....Bomb Ranges (a) 7000 & (b) 3000

Position of Bombs. (a) 1450' & (b) 1456'.....Hours on Clock. 24

Cushion: Type. Nil.....Air Chamber: Vol. Nil

Amount.....Length.....

Drilling Mud: Type. water.....Weight. 9.9.....Visc. 28.....W.L.....NaCl 5000.....Ph. 7.6

Recovery Mud: Type. water.....Weight. 8.9.....Visc. 30.....W.L.....NaCl 86,600.....Ph. 7.0

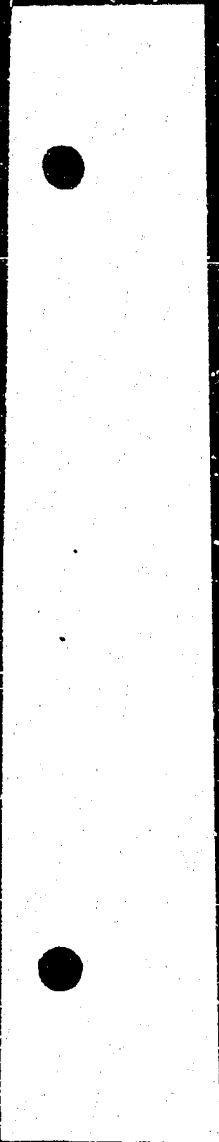
	Time	Duration	
Tester Started in hole	11:40 PM.	.....	Weight set on packer. 25M.....lbs.
Tester on Bottom	12:36 AM.	.....	
Packer Set	12:39.	.....	Mud level drop.....0.....feet
Tool Open	12:41.	5 mins.	
Tool Closed	12:46.	90 "	Pulled packer loose with 2M.....lbs.
Tool Open	2:16.	90 "	
Tool Closed	3:46.	90 mins.	
Pulled Packer loose	5:16.	.....	
Started out of hole	5:26.	.....	
Tester out of hole	7:00.	.....	

1076 CD 1

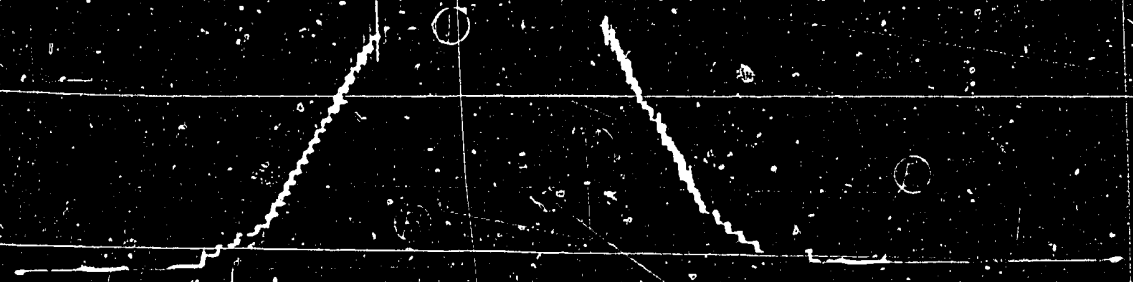
TEST DATA											
Formation		Mangtoe		Core Thickness		43		Direction		868.5' KB 862' GL	
Interval		1446		To		1524		ID		1524	
Type of Test		Open Hole, Bottom Hole,									
Time Started in Hole		2340		Hrs		Tool Open		0041		Hrs	
First Flow		S		Min		Shot In		90		Min	
Second Flow		90		Min		Final Shot In		90		Min	
Pulley Loose (ft)		0516		Hrs		Cutting Hole		0700		Hrs	
Wt. Set on Rocker		25,000		* Pulley Loose Wt		2,000					
Remarks											
Description of Blow During Test											
Weak blow throughout test.											
GAS BLOW MEASUREMENTS											
Measured with											
ID Riser or Est.											
Type of Instrument											
Time											
Size, Choke											
Reading, inches											
Cubic Feet Day											
TOOL SEQUENCE											
D.P. Sub.											
S.I.T.											
Hyd. Tool											
Safety Jt.											
T.C. & Pkr.											
T.C. & Pkr.											
Total											
Stub											
Perf.											
Recorder											
Recorder											
Sub.											
Drill Collar's											
Sub.											
Perf. & E. Nose											
Total Intv.											
FLUID RECOVERY											
Was Test Reverse Circulated Yes ☐ No ☒											
Fluid Recovered Total											
190											
Description of Fluid Recovered											
190' of water.											
MUD AND HOLE DATA											
Mud Type											
Water											
Filter Cake											
2/32 Visc. 29											
Time Taken											
2200 hrs.											
Contractor											
Tri-City Drilling											
Remarks											
Test Satisfactory.											
Co. Rep.											
J. Walasko & J. McNutt											
Tester											
J. McGillicky											
District											
Ft. St. John											
Company											
Imperial Oil Limited											
Well Name											
IOE Triad Ebbutt #J-70											
Number											
#62°-19'-31"N-121°-57'-43"W.											
Formation											
Mangtoe -1446-1524											
and Interval											
Ticket No.											
C 266											
Address											
Trail Building, Dawson Creek, British Columbia											
Test No.											
1											
J.T.L. Test No.											
1											
Field											
Wildcat											
Province											
N.W.T.											
Consultant											
Distribution of Reports											
9-Dawson Creek, 1 & charts-Calgary, 1-Data (All Enclosed to Dawson Creek)											

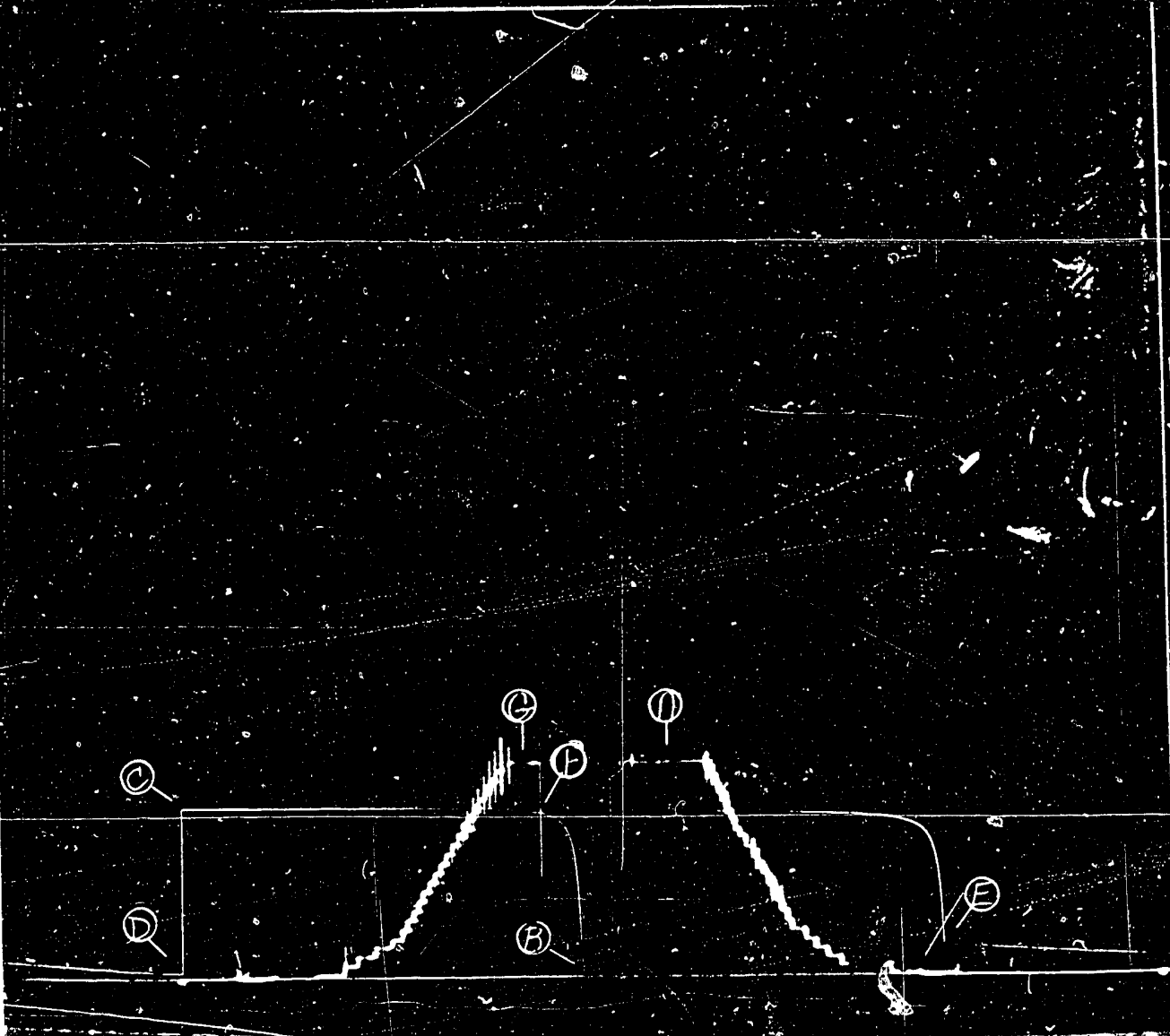
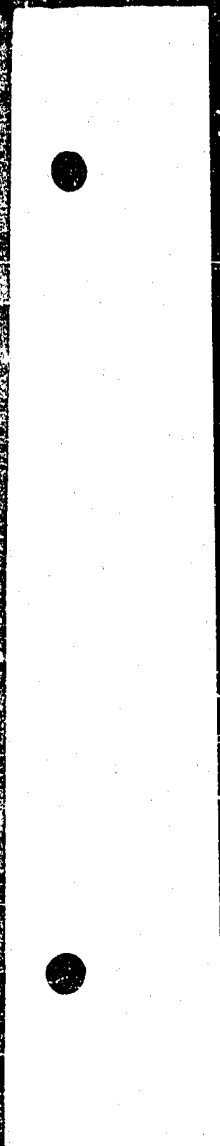
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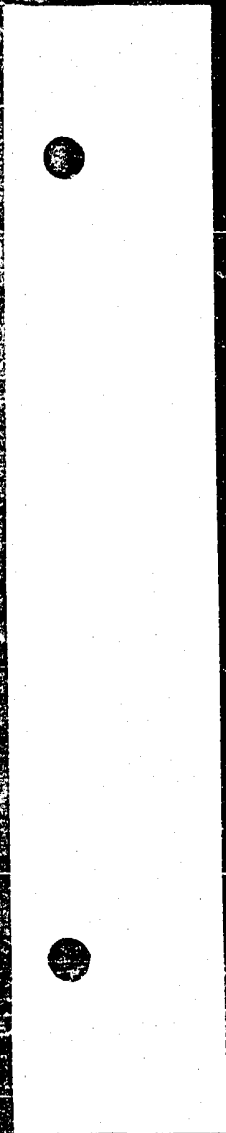


TRIM T# C.266 XCH. T-194





TICKET # C266 REC # T-184



⑤

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④

③

⑥

④

TICET #C266 Pict #1



TICKET # C656

1000

④

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20

JOHNSTON TESTERS

Pressure Data

Test Ticket No. **C 288**

Recorder No.	T-131	T-194		
Capacity P.S.I.G.	7000	5000		
Recorder Depth	1450	1456		
Pressure Gradient P.S.I. Ft.				
Well Temperature °F	82°	82°		
A. Initial Hydrostatic	6745	6805		
B. First Initial Flow	355	375		
C. Initial Shut-In Pres.	5505	5525		
D. Flowing Pres.	485	475		
E. Final Flow	1195	1215		
F. Final Shut-In	5375	5395		
G. Final Hydrostatic	6745	6805		

Remarks: **T-131-Inside Recorder**
T-194-Outside Recorder

902141

902141

Test Report No. C 286

Recorder Depth 1456

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

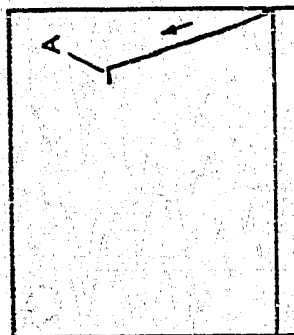
High Temperature 82 °F

Ordered Tool	0041	AM	
First Flow	5	Mins	Mins
Initial Shut-in	90	Mins	Mins
Flow	90	Mins	Mins
Final Shut-in	90	Mins	Mins

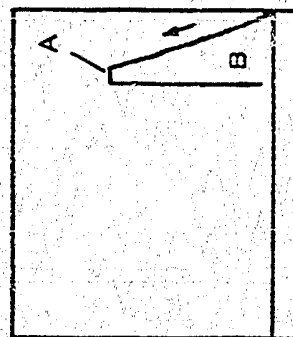
References

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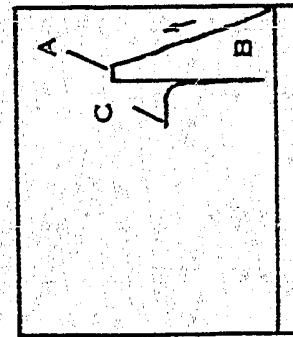
GUIDE TO INTERPRETATION AND IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



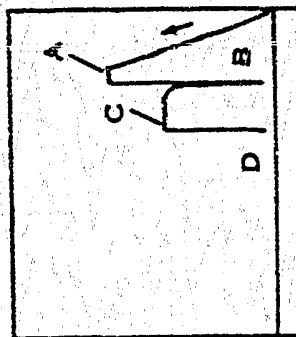
The pressure chart records the build-up in test zone. When the test valve is opened, a pressure drop is indicated on the pressure chart. This pressure drop is caused by removal of the hydrostatic mud pressure from the formation, allowing the formation to produce.



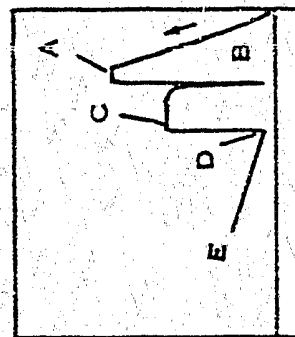
The packer is expanded and set to isolate the test zone. When the test valve is opened, a pressure drop is indicated on the pressure chart. This pressure drop is caused by removal of the hydrostatic mud pressure from the formation, allowing the formation to produce.



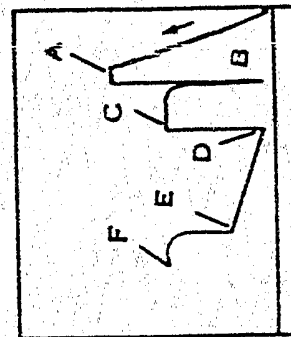
This chart shows the initial shut-in pressure. There is one mechanical method commonly used to obtain this pressure. A 4 stage shut-in tool that is run-in in the open position and rotated closed when the desired amount of initial pressure is obtained. This initial shut-in pressure is the best method yet devised for recording the original undisturbed reservoir pressure of a formation.



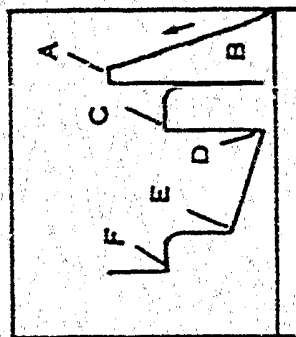
The chart indicates a pressure drop. The test tool has been opened to the surface by rotating the 4 stage shut-in tool into the open position. Permitting the open formation to produce.



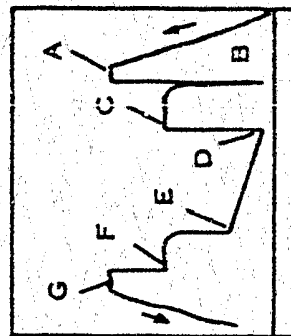
The pressure of fluid flowing from the formation into the well bore, through the perforated anchor, and into the drill pipe, is recorded on the chart.



The final shut-in pressure is taken by stopping the flow of formation fluid into the drill pipe. Note the characteristic build-up curve. The well bore pressure is approaching equilibrium with the static reservoir pressure. When the shut-in curve levels-off the static reservoir pressure has been reached.



The chart shows the equalizing the bypass both have been opened, permitting the drilling fluid to flow through the packer to the test zone. The pressure is equalized above and below the packer. The equalization of the pressure facilitates easier removal of the packer from the packer test.

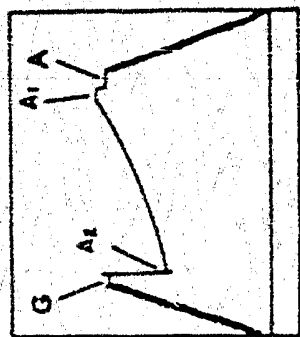


The packer has been removed. The testing assembly is being removed from the hole.

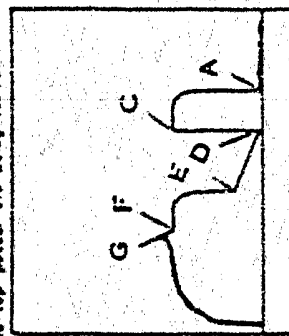
INDEX OF LABELED POINTS:

- A—Initial Hyd. Mud
 - B—First Initial Flow
 - C—Initial Shut-in
 - D—Initial Flow
 - E—Final Flow
 - F—Final Shut-in
 - G—Final Hyd. Mud
- The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).
- A-1, A-2, A-3, etc. Initial Hyd. Pressures.
 - B-1, B-2, B-3, First Initial Flow.
 - C-1, C-2, C-3, etc. The Initial Shut-in Pressures.
 - D-1, D-2, D-3, etc. Flowing Pressures.
 - E-1, E-2, E-3, etc. The Final Flow Pressures or Final Shut-in Pressures.
 - F-1, F-2, F-3, etc. The Final Shut-in Pressures.
 - G-1, G-2, G-3, etc. Final Hyd. Mud Pressures.

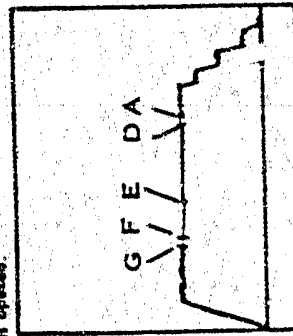
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



The above is a typical illustration of a chart from a recorder that is run below the bottom packer on a conventional straddle tool. Only the hydrostatic mud pressure are recorded. When the tool is opened, there is a pressure differential across the bottom packer. This differential is sensed by the rubber fiber of the packer element, which in turn causes a downward pressure. If the below straddle chart reads the same as a chart that is run to record pressure of the test zone, then the bottom packer has failed. If this occurs, all zones below the top packer are being tested.



In this case a recorder has been set in an air chamber. The hydrostatic mud pressure are not indicating the recorder using flow is or coming out of the hole due to the main filter valve being closed. The flow pressure and shut-in pressures are recorded while the main filter valve is opened.



In this case a recorder has been set above the main filter valve with a field cushion used in the drill pipe. No pressure is recorded as the test tool is being lowered into the hole. Then the fluid cushion pressure is recorded as the drill pipe is filled with fluid. At more standers are run into the hole, the recorder registers the hydrostatic pressure of the cushion. When the main testing valve is opened the pressure of the cushion column or the flowing pressure of the formation, (which ever is greater), is recorded.

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

DRILL STEM TEST REPORT #2

Well Name. I.O.E. TRIAD EBBUTT J-70 Formation. Bear Rock Date March 30, 1964
 Location. J-70 (62°20' - 121°45') Interval tested from 1700' to 1750'
 Basis for test. Poor intercrystalline and poor organic porosity with dead oil stain.
 Results. 10 feet fluid.
 TESTING DATA
 Well Depth. 1911' Full Hole Size. 6 1/2" Drill Pipe: OD. 5 1/2" Weight.
 Grade. Joint Type. IF Capacity.
 Rat Hole Top. Nil Rat Hole Size. Drill Collars: OD. 300.02 Feet.
 Joint Type. Capacity.
 Size Top Choke. Nil Size Bottom Choke. 1/2
 Packer Type. Conventional & BT No. of Packers. 4 Packer Size. 5 1/2
 Bomb Type. T & Conv. No. of Bombs. 3 Bomb Ranges. (a) 3000 & (b) 7000
 Position of Bombs. (a) 1712, (b) 1706, Conv. 1749 Hours on Clock. 24
 Cushion: Type. Nil Air Chamber: Vol. Nil
 Amount. Length.
 Drilling Mud: Type. water Weight. 8.9 Visc. 29 W.L. NaCl. 5,000 Ph.
 Recovery Mud: Type. water Weight. 8.9 Visc. 29 W.L. NaCl. 5,000 Ph.

	Time	Duration	
Tester Started in hole	1:00 AM.	.....	Weight set on packer. 25M lbs.
Tester on Bottom	1:33	.....	
Packer Set	1:43	.....	Mud level drop. 0 feet
Tool Open	1:48	5 mins.	
Tool Closed	1:53	90 "	Pulled packer loose with 18M lbs.
Tool Open	2:23	60 "	
Tool Closed	4:23	90 mins.	
Pulled Packer loose	5:53	.....	
Started out of hole	6:25	.....	
Tester out of hole	7:43	.....	

FLOW AND RECOVERY DATA:

Time	Pressure	Riser	Mcf/day	Time	Pressure	Riser	Mcf/day
1				7 .....	.....	.....	.....
2				8 .....	.....	.....	.....
3				9 .....	.....	.....	.....
4				10 .....	.....	.....	.....
5				11 .....	.....	.....	.....
6				12 .....	.....	.....	.....

Liquid to Surface Mud....mins, Oil....mins, Water....mins, Est.rate.....

TOTAL FLUID IN DRILL PIPE

(including water cushion) Type	Stands	Feet	ppm NaCl
1. WATER	1	10 .....	.....
2			
3			
4			
5			
6			

Sampling Position	Sample No.	Position	Salinity of water.....ppm NaCl
(Feet above packer)	1	1001 .....	.....
.....	.....	.....	Gravity of oil.....°API
.....	.....	.....	Gas (Sweet.....Sour.....).

Samples sent for analysis to.....

FIELD PRESSURE DATA: (Check if blanked off)

Top Bomb () Inside Bomb	Bottom Bomb () Outside Bomb
I.H.P. 705	I.H.P. 805
2nd I.F.P. 5	2nd I.F.P. 5
1st I.F.P. 8	1st I.F.P. 8
2nd F.F.P. 5	2nd F.F.P. 5
1st F.F.P. 8	1st F.F.P. 8
2nd S.I.P. 85	2nd S.I.P. 101
1st S.I.P. 120	1st S.I.P. 120
F.H.P. 785	F.H.P. 800
B.H.T. ....°F.	B.H.T. 85

Do charts show normal operation.....Yes..... Was test satisfactory.....Yes.....

Remarks (Explain misruns etc.) Weak initial puff. Weak air blow dead in one minute.

Reset after sixteen minutes and dead after one minute.....

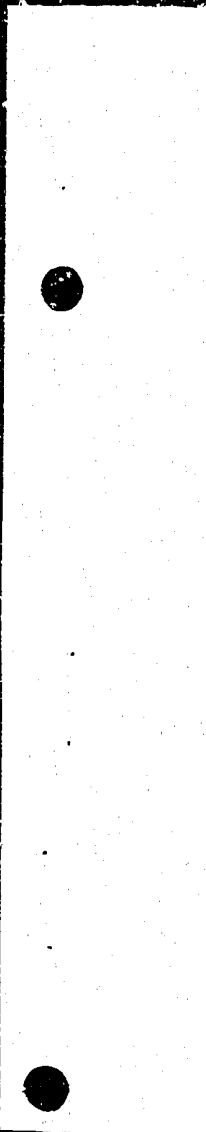
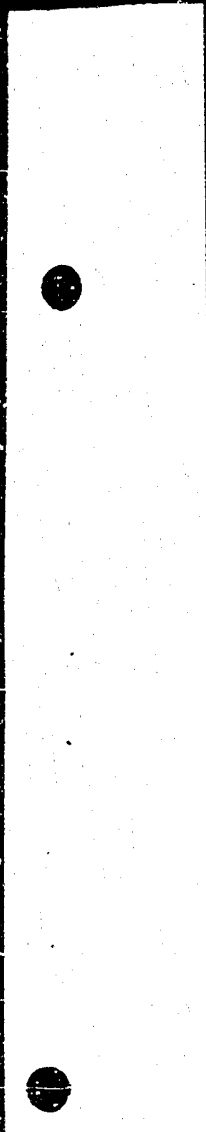
Test No. 2 Signature.....James T. Walasko.....

Testing Co. Johnston Testers Title.....Geological.....

Operator J. McGillicky Well Name.....I.O.P. TRIAD EBBUTT J-70.....

JOHNSTON TESTERS

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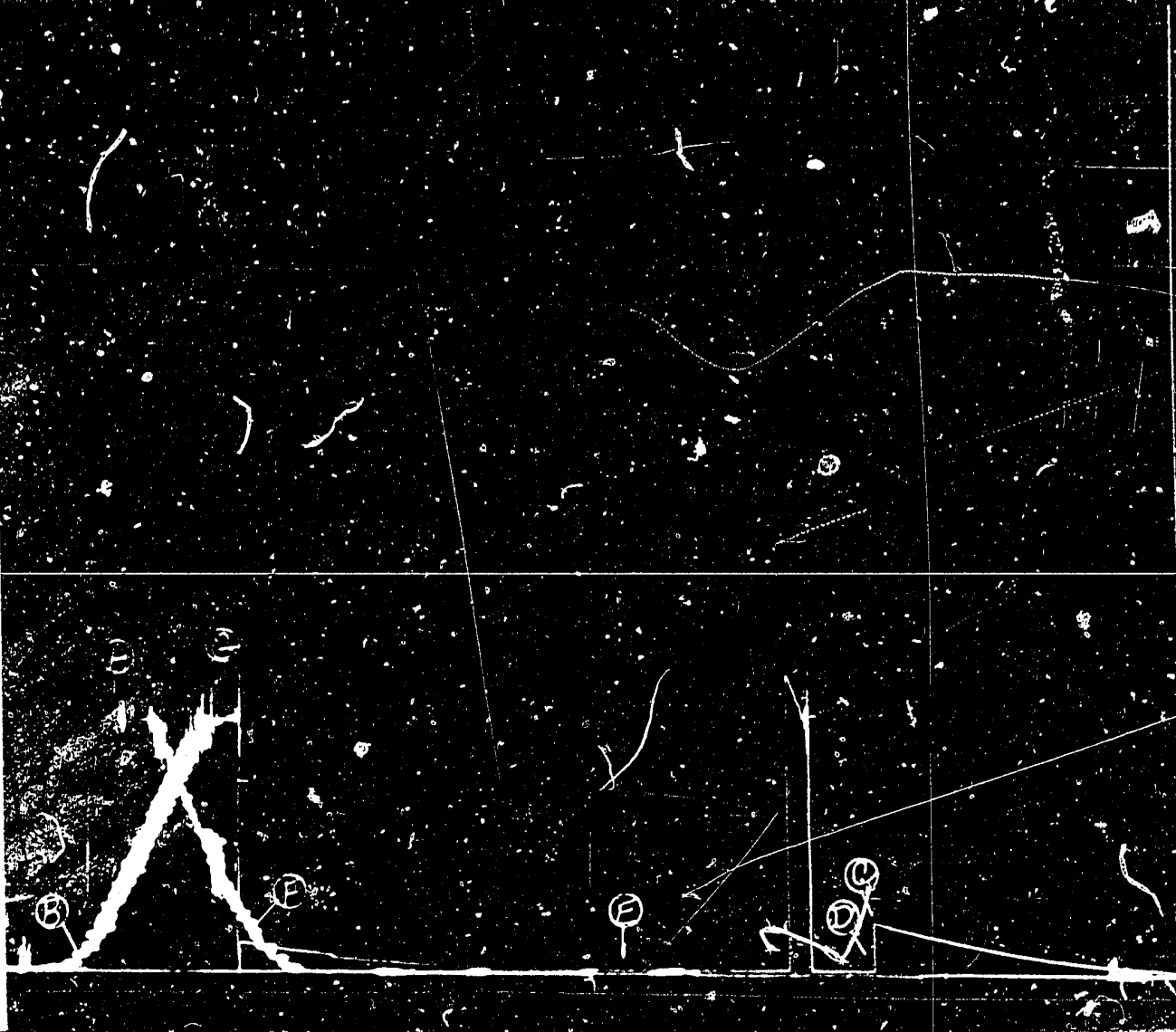
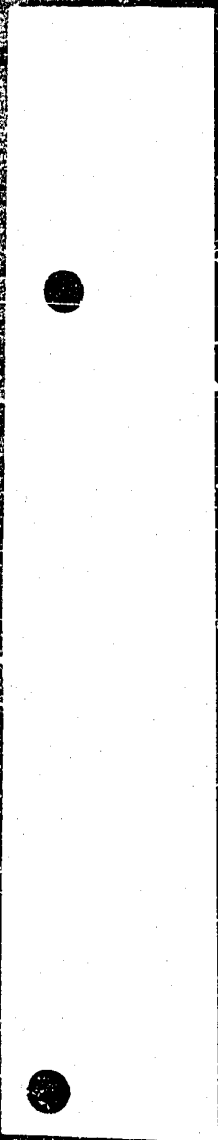
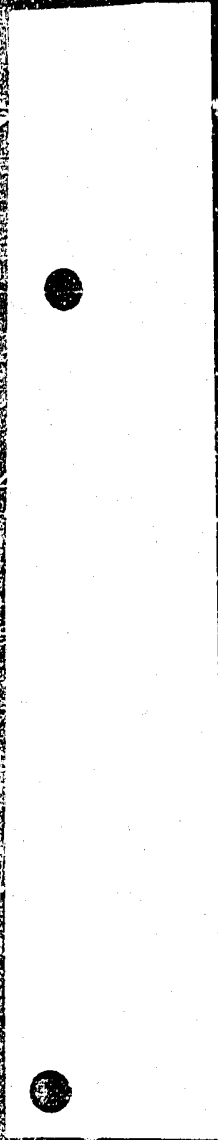
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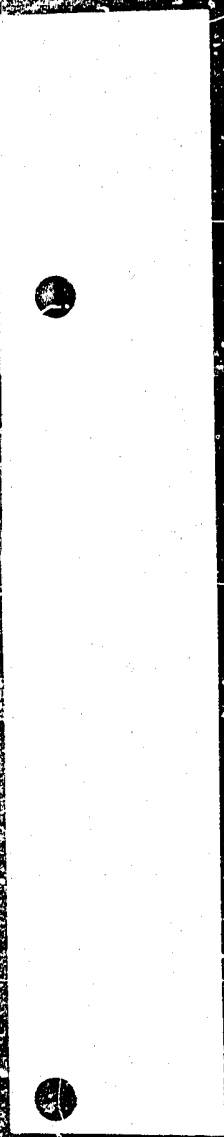
TICKET #C867 REC# 1-101

TICKET #C867 REC# 1-101

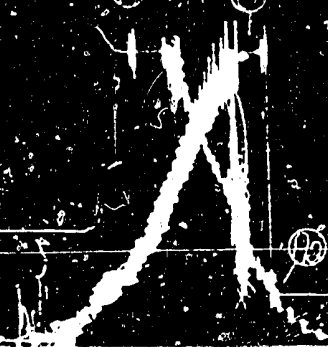
TICKET #C867 REC'D 1-24

1-24

TICKET #C867

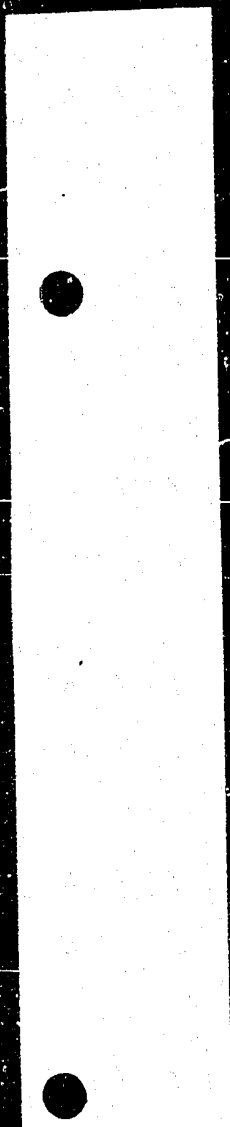


From Middle



TICKET # C267

5-11



JOHNSTON TESTERS

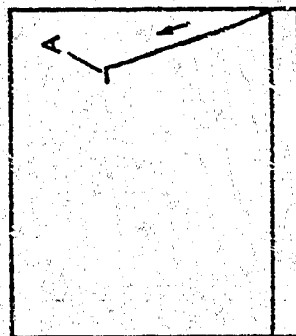
Pressure Data

Test Ticket No. E 267

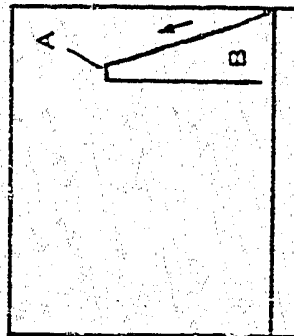
Recorder No.	T-131	T-194	826		
Capacity P.S.I.G.	7000	3000	3000		
Recorder Depth	1706	1712	1749		
Pressure Gradient P.S.I. ft.					
Well Temperature °F	85°	85°	85°		
A Initial Hydrostatic	792#	786#	818#		
B First Initial Flow	35#	36#			
C Initial Shut-In Pres	178#	177#	A-1 888#		
D Flowing Pres	35#	34#	Ran Below		
E Final Flow	35#	33#	Straddle.		
F Final Shut-In	109#	116#	A-2 162#		
G Final Hydrostatic	781#	766#	816#		

Remarks T-131-Inside Recorder
T-194-Outside Recorder
826-Outside Recorder

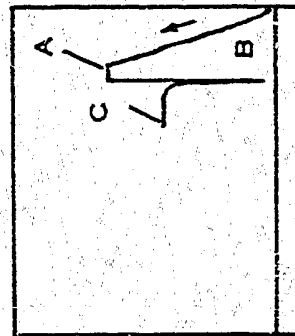
GUIDE TO INTERPRETATION AND IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



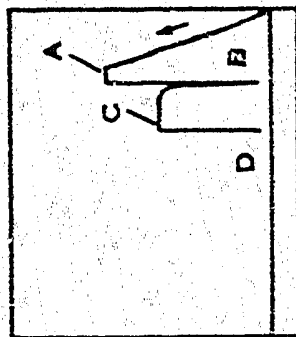
The pressure chart records the build-up in hydrostatic pressure as the testing assembly is lowered into the hole. Upon reaching the testing depth the hydrostatic head or pressure of mud column is recorded.



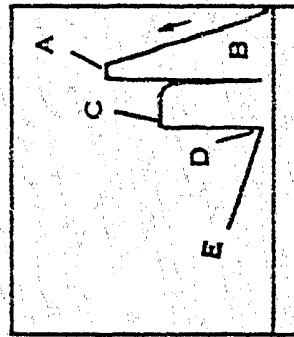
The packer is expanded and set to isolate the test zone. When the test valve is opened, a pressure drop is indicated on the pressure chart. This pressure drop is caused by removal of the hydrostatic mud pressure from the formation, allowing the formation to produce.



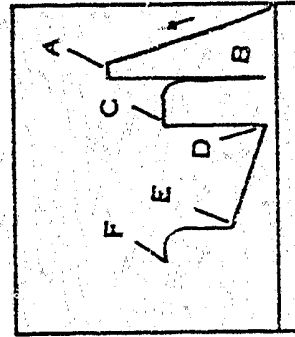
This chart shows the initial shut-in pressure. There is one mechanical method commonly used to obtain this pressure. A 4 stage shut-in tool that is run-in in the open position and rotated closed when the desired amount of initial flow time is obtained. This initial shut-in pressure is the best method yet devised for recording the original undisturbed reservoir pressure of a formation.



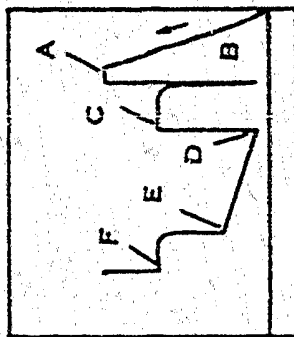
The chart indicates a pressure drop. The test tool has been opened to the surface by rotating the 4 stage shut-in tool into the open position. Permitting the open formation to produce.



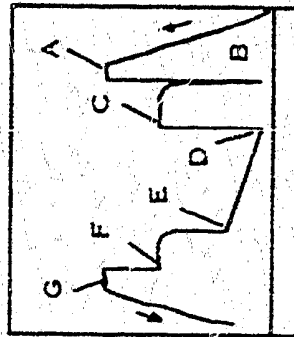
The pressure of fluid flowing from the formation into the well bore, through the perforated anchor, and into the drill pipe, is recorded on the chart.



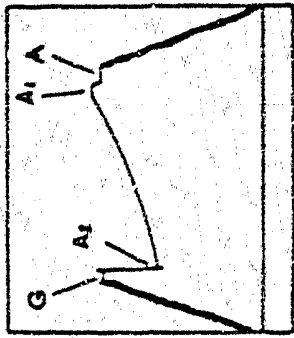
The final shut-in pressure is taken by stopping the flow of formation fluid into the drill pipe. Note the characteristic build-up curve. The well bore pressure is approaching equilibrium with the static reservoir pressure. Then the shut-in curve levels-off the static reservoir pressure has been reached.



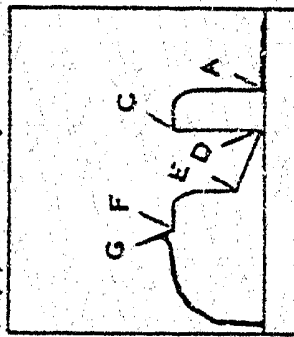
The chart shows the equalizing the bottom hole pressure. The packer has been opened permitting the fluid to flow through the packer to the test zone. Then, pressure is equalized above and below the packer. The equalization of the pressure facilitates easier removal of the packer from the packer seat.



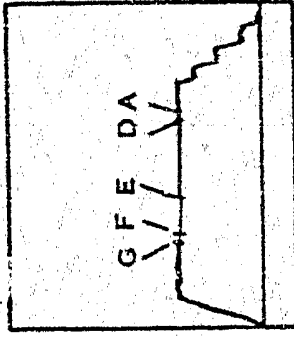
The packer has been removed. The testing assembly is being removed from the hole.



This is a typical illustration of a chart from a recorder that is run below the bottom packer on a conventional shackle test. Only the hydrostatic mud pressure is recorded. When the tool is opened, there is a pressure differential across the bottom packer. This differential is caused by the rubber flow of the packer element which is torn causing a drop-down in pressure. If the below shackle chart reads the time as a chart that is run to record pressure of the test zone, then the bottom packer has failed. If this occurs, all zones below the top packer are being tested.



In this case a recorder has been run in an air chamber. The hydrostatic mud pressures are not influencing the recorder while going in or coming out of the hole due to the main test valve being closed. The flow pressure and shut-in pressure are recorded while the main test valve is opened.



In this case a recorder has been run above the main test valve with a fluid cushion stand in the drill pipe. No pressure is recorded as the testing tool is being lowered into the hole. Then the fluid cushion pressure is recorded as the drill pipe is filled with fluid. As more stands are run into the hole, the recorder registers the hydrostatic pressure of the test zone. When the main test valve is opened the pressure of the test zone or the flowing pressure of the formation, (which ever greater), is recorded.

INDEX OF LABELED POINTS:

- A—Initial Hyd. Mud
 - B—First Initial Flow
 - C—Initial Shut-in
 - D—Initial Flow
 - E—Final Flow
 - F—Final Shut-in
 - G—Final Hyd. Mud
- The following points are either fluctuating pressures or points indicating other packer seth. (Testing different zones).
- A-1, A-2, A-3, etc. Initial Hyd. Pressures.
 - B-1, B-2, B-3, First Initial Flow.
 - C-1, C-2, C-3, etc. The Initial Shut-in Pressures.
 - D-1, D-2, D-3, etc. Flowing Pressures.
 - E-1, E-2, E-3, etc. The Final Flow Pressures or Final Shut-in Pressures.
 - F-1, F-2, F-3, etc. The Final Shut-in Pressures.
 - G-1, G-2, G-3, etc. Final Hyd. Mud Pressures.

- Z — Special pressure points such as pumping pressure recorded for formation breakdown.

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

DRILL STEM TEST REPORT #3

Well Name. IOE TRIAD EBRUTT J-70.....Formation.....Running?.....Date April 6, 1964..

Location. J-70 (62°20' / 121°45').....Interval tested from 2595'.....to 2625'..

Basis for test. Lose 40 bbls. mud while coring. 3' very good sandy porosity in
Core #6.

Results. Recovered 2050' fluid. 940' mud colored salt water; 1510' salt water.

TESTING DATA 2625'
Well Depth.....Full Hole Size.....6".....Drill Pip. OD 5".....Weight 13.3

Grade.....0.....Joint Type 1 F.....Capacity.....

Rat Hole Top. 2606.....Rat Hole Size. 6 11/16".....Drill Collars: OD 4".....Feet 300.22

Joint Type 1 F.....Capacity.....

Size Top Choke. #11.....Size Bottom Choke. 1/2"

Packer Type. Bobtail.....No. of Packers. 2 (Dual).....Packer Size. 5 1/2"

Bomb Type. T.....No. of Bombs. 2.....Bomb Ranges. 0 - 3000, 0 - 7000

Position of Bombs. 2503' 2517'.....Hours on Clock. 48

Cushions: Type. None.....Air Chamber: Vol. None

Amount.....Length.....

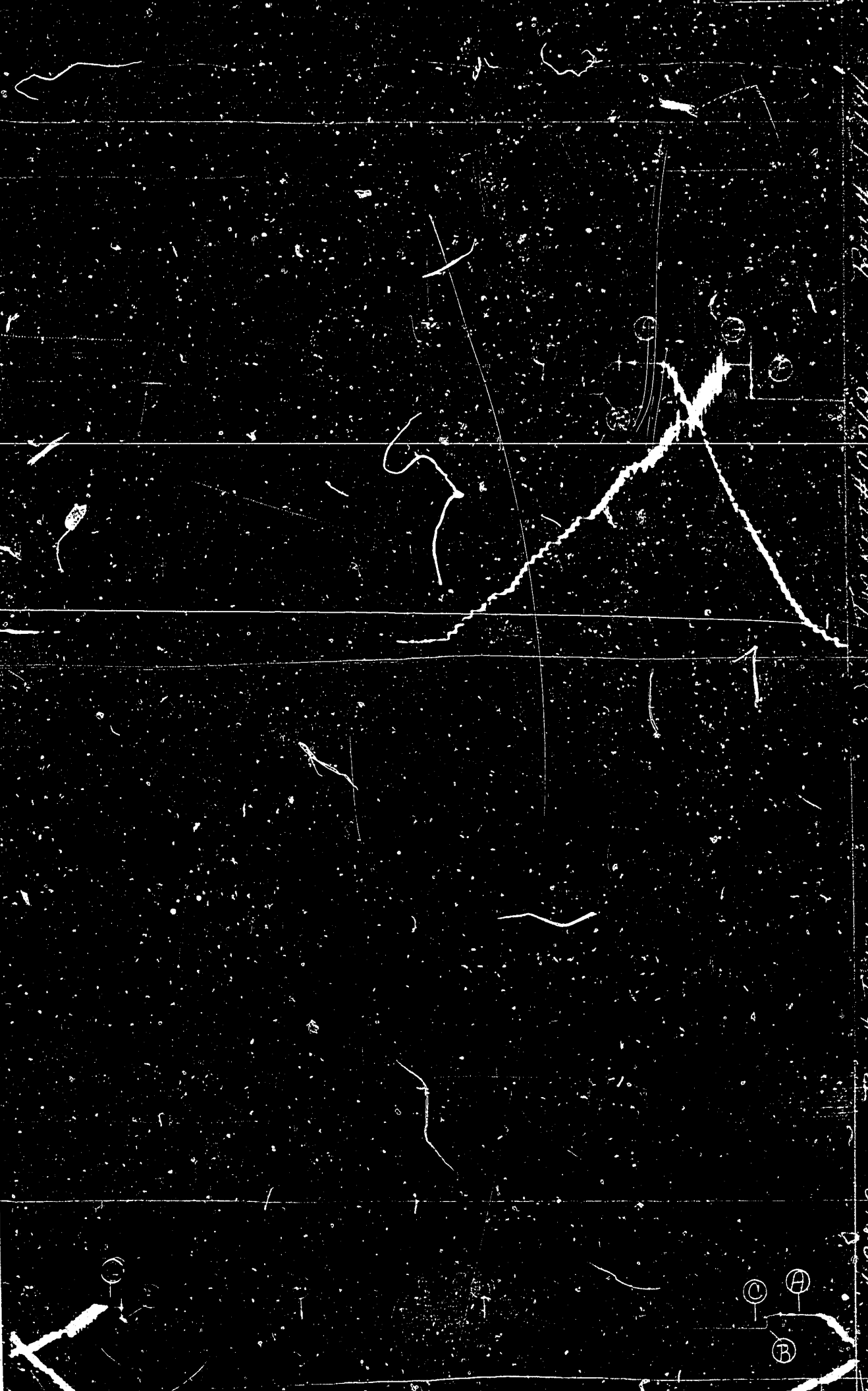
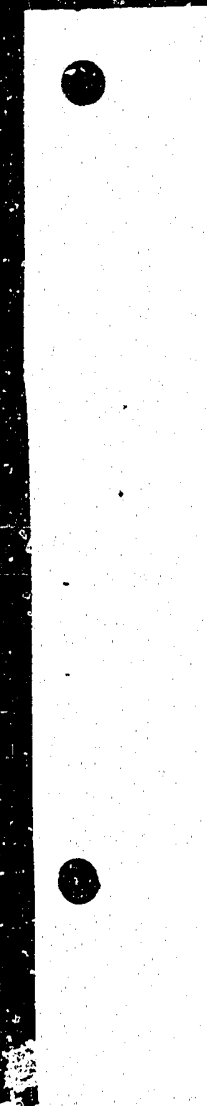
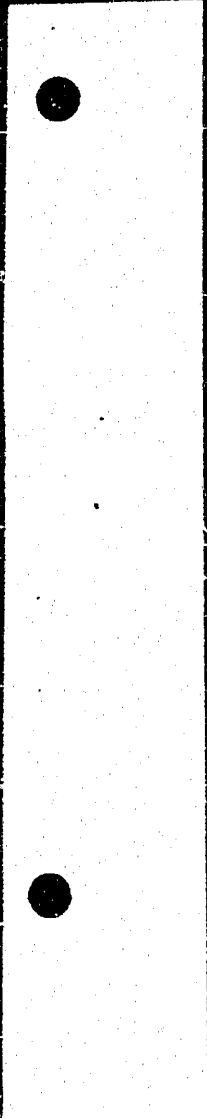
Drilling Mud: Type. Water.....Weight. 8.6.....Visc. 28.....W.L. 1.....NaCl. 7.7% PPH.....

Recovery Mud: Type. Water.....Weight. 8.3.....Visc. 27.....W.L. 1.....NaCl. 1.1% PPH.....

	Time	Duration	
Tester Started in hole	01:45	.....	Weight set on packer. 25M lbs.
Tester on Bottom	03:00	.....	
Packer Set	03:00	.....	Mud level drop. None feet
Tool Open	03:04	05 mins.	
Tool Closed	03:08	20 "	
Tool Open	04:36	60 "	Pulled packer loose with. 8M lbs.
Tool Closed	05:39	60 mins.	
Pulled Packer loose	06:39		
Started out of hole	06:54		
Tester out of hole	07:39		

JOHNSTON TESTERS

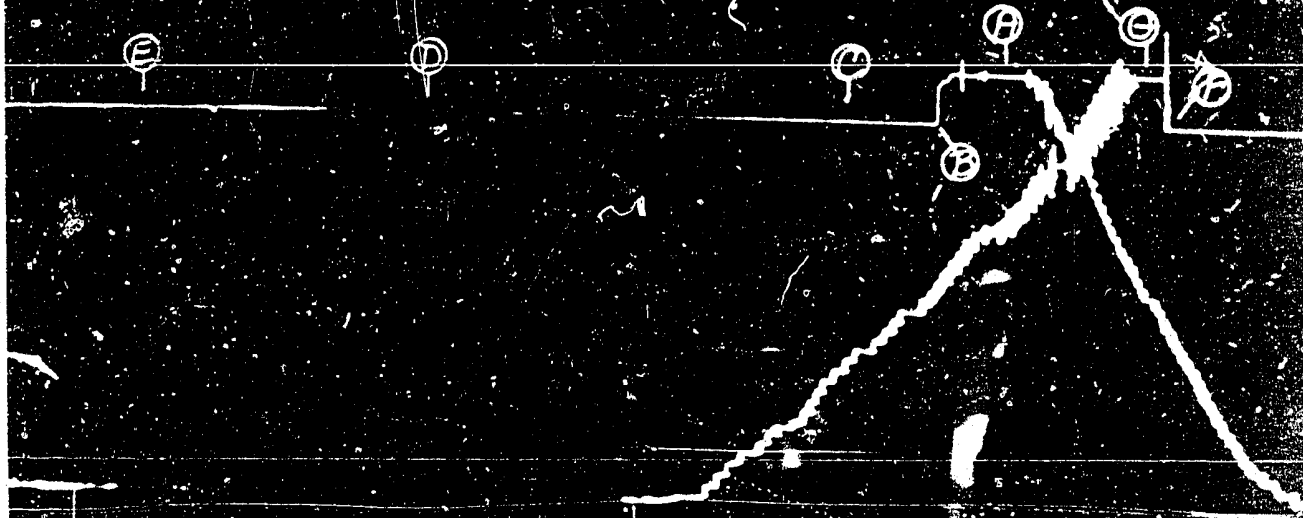
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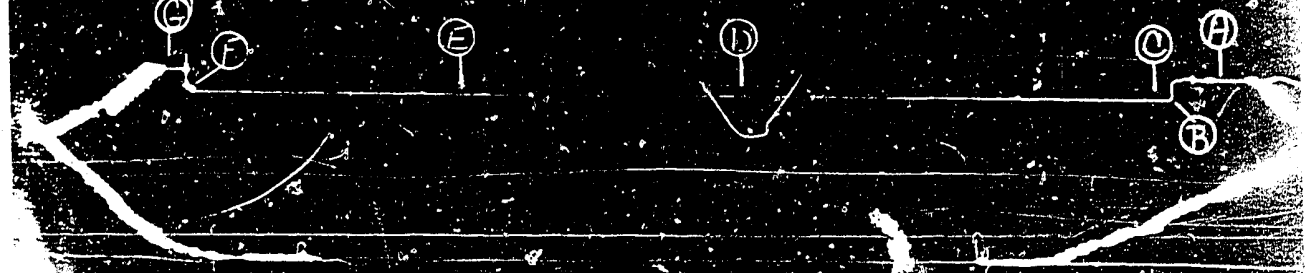
SECRET# C269 REC# T131

Post 1-194

Thermocouples



Post 1-194



JOHNSTON TESTERS

Pressure Data

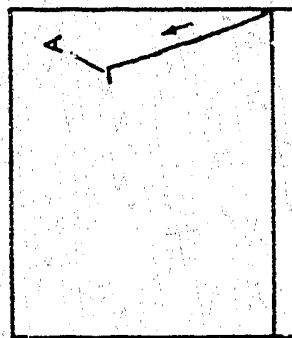
Test Ticker No.

C 269

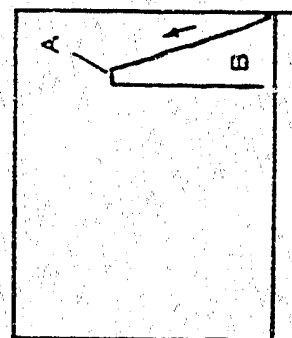
Recorder No.	T-194	T-131		
Capacity P.S.I.G.	3000	7000		
Recorder Depth	2863 2647	2647 2519		
Pressure Gradient P.S.I./Ft.				
Well Temperature °F	88°	88°		
A. Initial Hydrostatic	1198#	1202#		
B. First Initial Flow	1062#	1069#		
C. Initial Shut-in Pres	1062#	1069#		
D. Flowing Pres	1062#	1069#		
E. Final Flow	1062#	1069#		
F. Final Shut-in	1062#	1069#		
G. Final Hydrostatic	1202#	1208#		

Remarks T-194-Inside Recorder
T-131-Outside Recorder

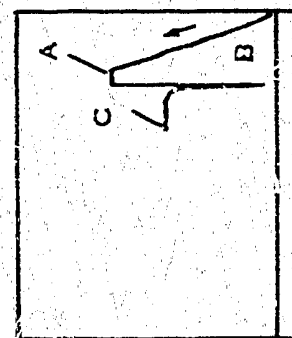
GUIDE TO INTERPRETATION AND IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



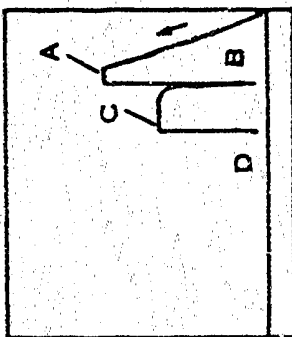
The pressure chart records the build-up in hydrostatic pressure at the testing assembly is lowered into the hole. Upon reaching the testing depth the hydrostatic head or pressure of mud column is recorded.



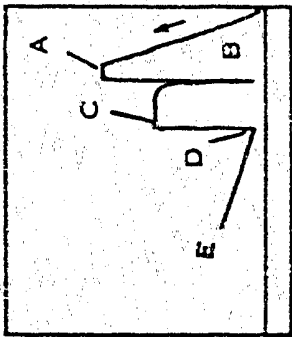
The packer is expanded and set to isolate the test zone. When the test valve is opened, a pressure drop is indicated on the pressure chart. This pressure drop is caused by removal of the hydrostatic mud pressure from the formation, allowing the formation to produce.



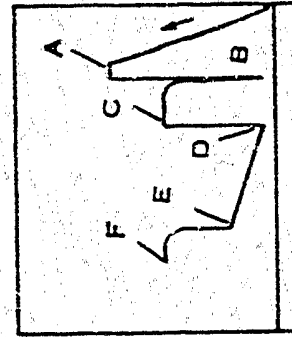
This chart shows the initial shut-in pressure. There is one mechanical method commonly used to obtain this pressure. A 4 stage shut-in tool, that is run-in in the open position and related closed when the desired amount of initial flow time is obtained. This initial shut-in pressure is the best method yet devised for recording the original undisturbed reservoir pressure of a formation.



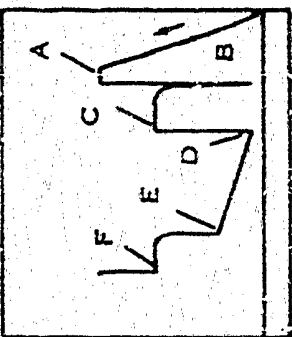
The chart indicates a pressure drop. The test tool has been opened to the surface by rotating the 4 stage shut-in tool into the open position. Permitting the open formation to produce facilitates easier removal of the packer from the packer seat.



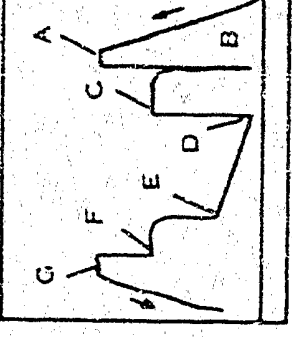
The pressure of fluid flowing from the formation into the well bore, through the perforated anchor, and into the drill pipe, is recorded on the chart.



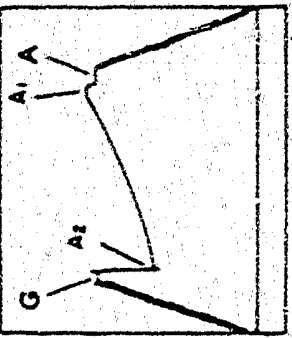
The final shut-in pressure is taken by stopping the flow of formation fluid into the drill pipe. Note the characteristic build-up curve. The well bore pressure is approaching equilibrium with the static reservoir pressure. When the shut-in curve levels off the static reservoir pressure has been reached.



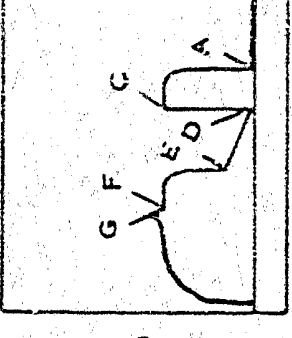
The chart shows the equilibrating the system. The packer has been opened, permitting the drilling fluid to flow through the packer to the test zone. Thus, pressure is equalized above and below the packer. The equalization of the pressure facilitates easier removal of the packer from the packer seat.



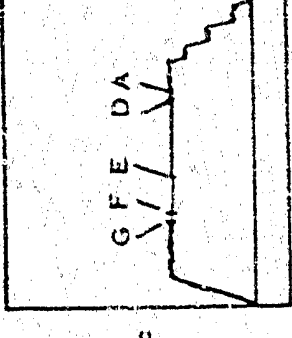
The packer has been unseated. The testing assembly is being removed from the hole.



The above is a typical illustration of a chart from a recorder that is run below the bottom packer on a conventional straddle test. Only the hydrostatic mud pressure is recorded. When the tool is opened, there is a pressure differential across the bottom packer. This differential is balanced by the rubber flow of the packer element, which in turn causes a drop in pressure. If the bottom straddle chart reads the same as a chart that is run to record pressure of the test zone, then the bottom packer has failed. If this occurs, all tests below the top packer are being tested.



In this case a recorder has been run in or out of chamber. The hydrostatic mud pressure is not tabulating the recorder which going in or coming out of the hole due to the mud filter valve being closed. The flow pressure and then in pressure are recorded while the mud filter valve is opened.



In this case a recorder has been run in or out of the hole with a fluid chamber tool in the drill pipe. No pressure is recorded at the testing tool is being lowered and then the fluid chamber pressure is recorded. Then the fluid chamber pressure is recorded. The drill pipe is filled with fluid. As the recorder stands are run into the hole, the recorder registers the hydrostatic pressure of the test zone. When the mud filter valve is opened the pressure of the column at the flowing pressure of the formation (which is greater) is recorded.

INDEX OF LABELED POINTS:

- A—Initial Hyd. Mud
 - B—First Initial Flow
 - C—Initial Shut-in
 - D—Initial Flow
 - E—Final Flow
 - F—Final Shut-in
 - G—Final Hyd. Mud
- The following points are either fluctuating pressures or points indicating other packer settings. (Testing different zones).
- A-1, A-2, A-3, etc. Initial Hyd. Pressures.
 - B-1, B-2, B-3, etc. First Initial Flow.
 - C-1, C-2, C-3, etc. The Initial Shut-in Pressures.
 - D-1, D-2, D-3, etc. Flowing Pressures.
 - E-1, E-2, E-3, etc. The Final Flow Pressures or Final Shut-in Pressures.
 - F-1, F-2, F-3, etc. The Final Shut-in Pressures.
 - G-1, G-2, G-3, etc. Final Hyd. Mud Pressures.
 - Z — Special pressure points such as pumping pressure recorded for formation breakdown.

DATE MARCH 21 1964

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

FORM NO. 600

CASING-CEMENTING REPORT

PAGE NO.

REFERENCE TALLY

NAME OF WELL LOE TRIAD EBBUTT J-70CONTRACT NO. TRI-CITYPREPARED BY JOHN A MCNUITT

CASING	SIZE OD IN	WEIGHT LB/FT	GRADE	MANUFACTURER	COLLARS SHORT/LONG	NO. OF JOINTS	AMOUNT FT	DEPTH FT K.B. (O)
	<u>8 5/8</u>	<u>24</u>	<u>J 55</u>	<u>MANN</u>	<u>SHORT</u>	<u>6</u>	<u>246.60</u>	

STAGING COLLAR

BACK-OFF COLLAR
OF PACKER

FLOAT COLLAR

CASING

SMOE

HOLE SIZE 12 1/4 FROM 0 TO 310 IN

HOLE SIZE _____ IN FROM _____ TO _____ FT

HOLE SIZE _____ IN FROM _____ TO _____ FT

K.B. TO TOP OF SURFACE CASING FLANGE 7.66

CASING CUTOFF _____ IN ABOVE TOP OF CASING FLANGE

TYPE OF CASING - A.P. ☒ EXTREME LINE ☐POWER TONGS USED - YES ☐ NO ☒

POWER TONGS SUPPLIED BY _____

TYPE OF FLOAT EQUIPMENT DAVIS

TOTAL

CALC AMT UP ON LAST JT

ACTUAL AMT UP ON LAST JT

MAKE UP ALLOWANCE

CASING SET

TOTAL DEPTH OF HOLE

1.33304.164.504.50299.66 K.B.310.00

ITEM	TYPE	MANUFACTURER	NO.	SPACING FT.	INTERVAL COVERED	FT. K.B. (O)
SCRATCHERS						
CENTRALISERS	<u>WEATHER FORD</u>	<u>1</u>			<u>290'</u>	

TYPE OF MUD WATER - GELINITIAL MUD WT 9.5 LB/GAL VISCOSITY 50 SEC

FINAL MUD WT _____ LB/GAL VISCOSITY _____ SEC

CEMENTED BY _____

CEMENT USED 175 SKS GEL _____ SKSADDITIVES CAC-2 AMT 3 SKS

AMT _____ SKS

TIME CASING STARTED IN HOLE 12 N AM. P.M.

DROPPING RATE AT 2000' WAS _____ SEC FOR _____ FT. JT

4000' WAS _____ SEC FOR _____ FT. JT

6000' WAS _____ SEC FOR _____ FT. JT

8000' WAS _____ SEC FOR _____ FT. JT

WAS THERE LOSS OF FLUID WHILE RUNNING PIPE? NO
IF SO AT WHAT DEPTH? _____ FT.TIME CASING ON BOTTOM _____ AM. 1:10 P.M.CIRCULATION BROKEN AT _____ AM. 1:15 P.M.

PRESSURE REQUIRED TO BREAK CIRCULATION _____ P.S.I.

CIRCULATING PRESSURE AFTER CLEANUP _____ P.S.I.

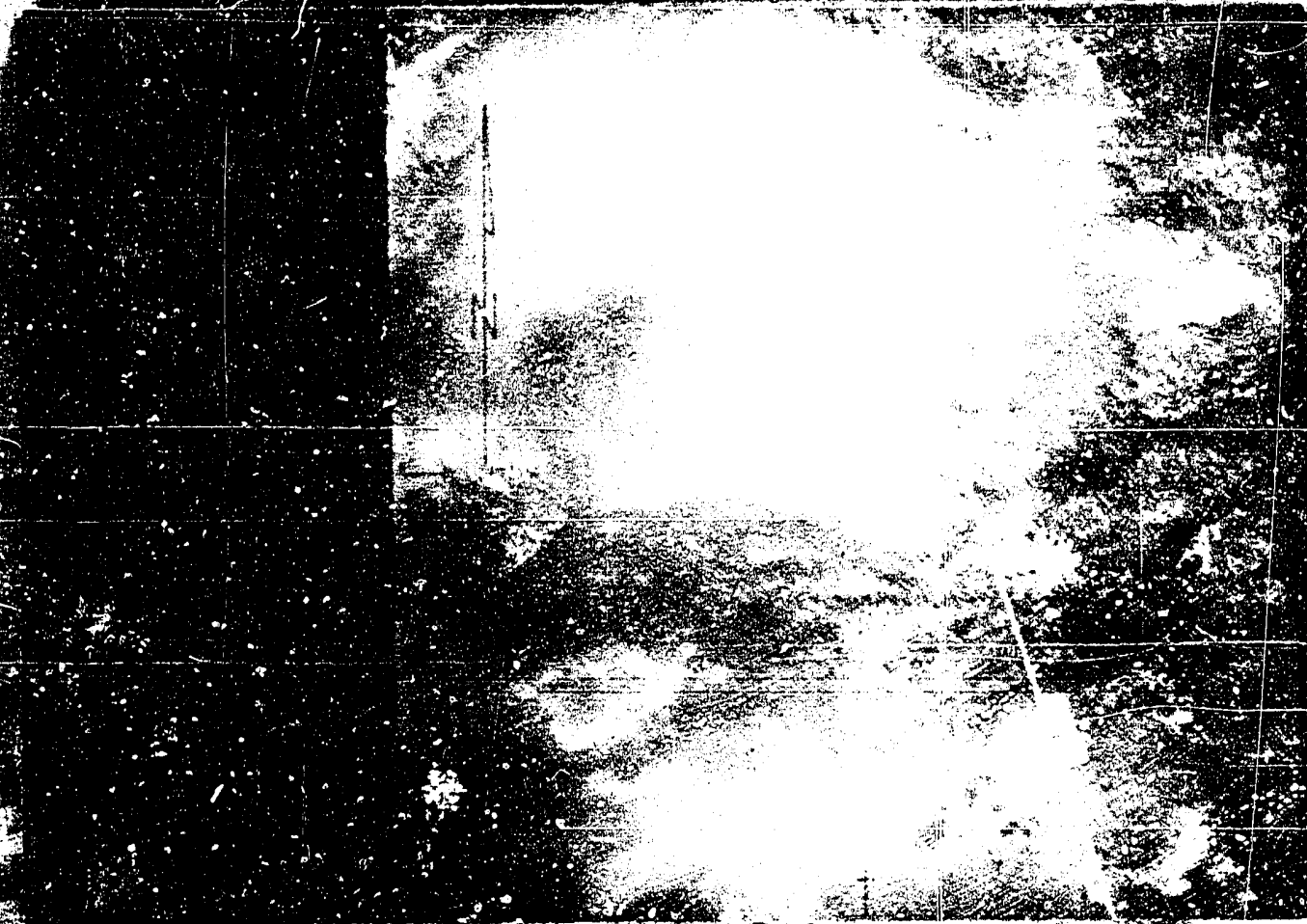
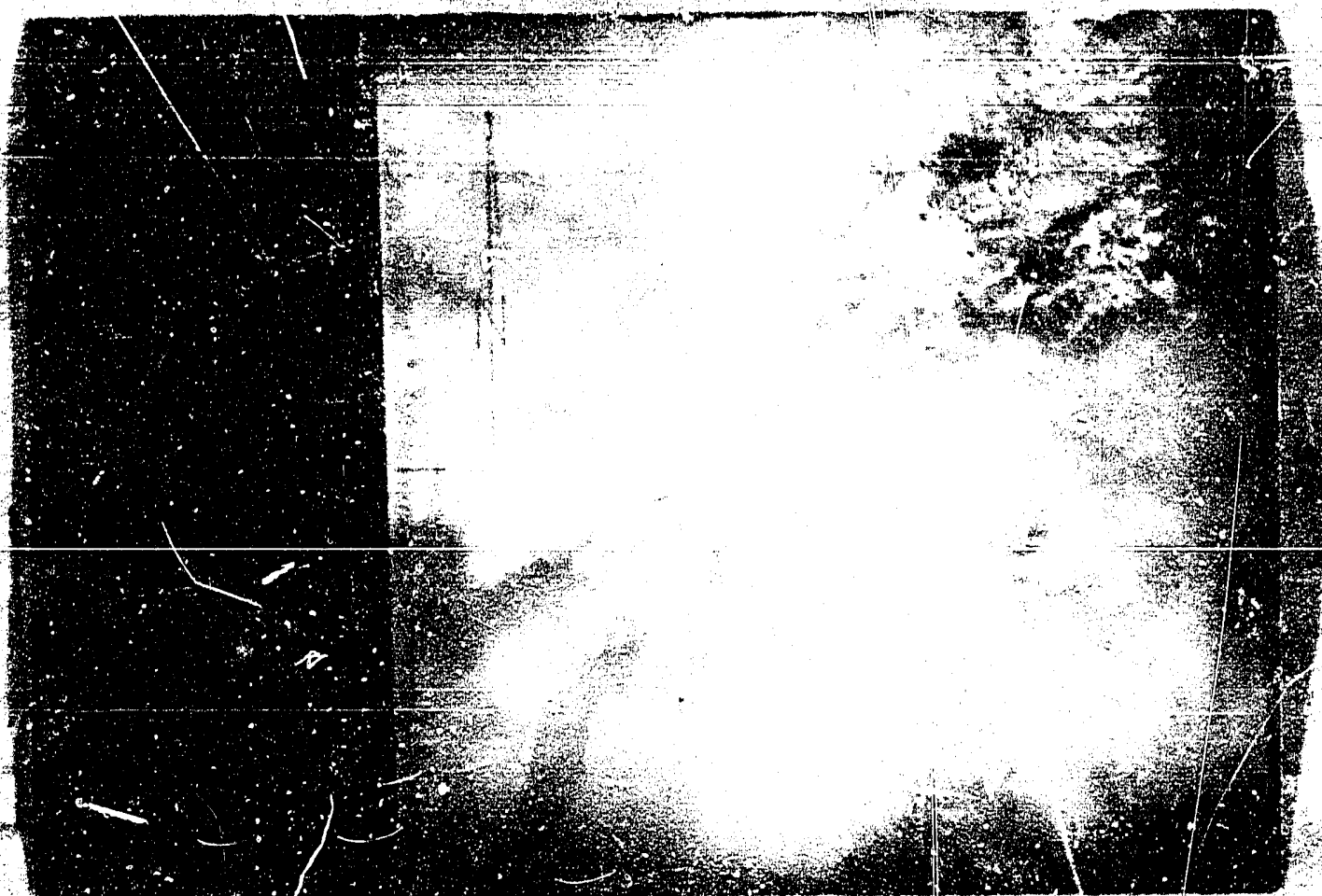
STROKE LENGTH WHILE RECIPROCATING 10 FT. INITIALLY50 FT. FINALLYTIME STARTED MIX CEMENT _____ AM. 1:45 P.M.WAS BOTTOM PLUG USED NOPRESSURE JUST BEFORE PLUG HITS 200 P.S.I.MAXIMUM PRESSURE 800 P.S.I.PLUG CHASED WITH H2O AND BUMPED AT _____ P.M.STROKE LENGTH WHILE CEMENTING 10 FT.

WAS THERE ANY DIFFERENCE IN PUMP PRESSURE ON

UPSTROKE AND DOWNSTROKE? NONE P.S.I.MUD RETURNS WHILE CEMENTING ☒ FULL ☐ PARTIAL☐ NONE EXPLAIN IN REMARKS.RECIPROCATION STOPPED AT _____ AM. 2:25 P.M.REMARKS GOOD RETURNS

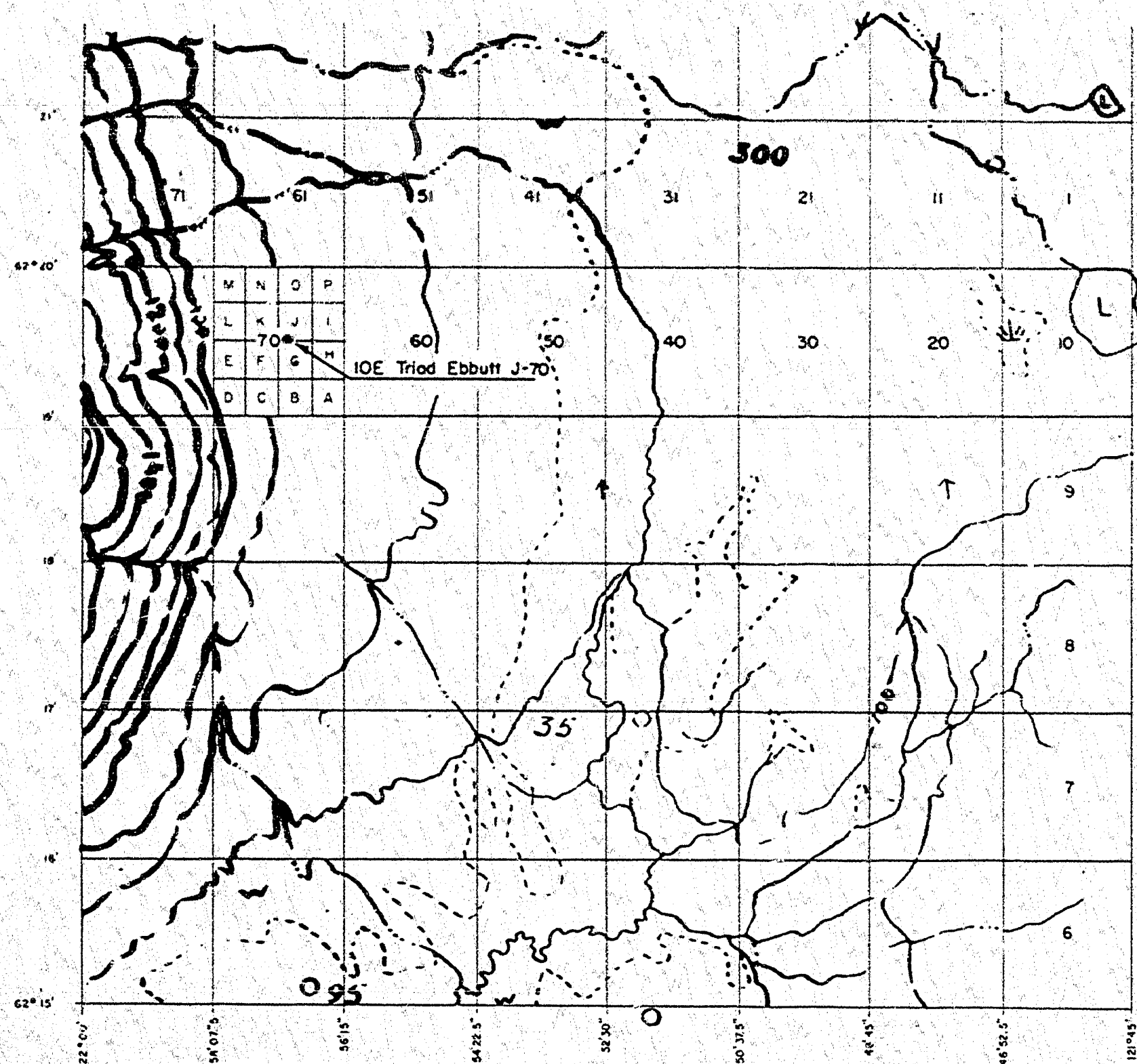
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PRELIMINARY PLAN
SHOWING LOCATION OF
IOE Triod Ebbutt J-70
IN UNIT J, SEC. 70, 62° 20' - 121° 45'
NORTHWEST TERRITORIES

Scale: 1 inch = 1 mile

1964

Lat. 62° 19' 31" Long. 121° 57' 03"

This map was prepared by enlarging a portion of Surveys and Mapping Branch, Dept. of Mines and Technical Surveys, Ottawa, 1" = 2 miles. Advance information of 95-1, Bulmer Lake, to a scale of 1" = 1 mile.

Air photographs of the location were flown on Mar. 24/64 by Imperial Oil Limited, Engineering Dept., Dawson Creek, B.C. An Otter aircraft was used with an F.24 camera having 5" lens cone, taking photos at 6000 ft. A.S.L., 1/300 and F.8. Well location was then transferred by means of sketchmaster to RCAF photograph A 11348 - 299, and then from this photograph to map by means of sketchmaster.

Compiled April 20, 1964

by J. E. Watmore
A.L.S. B.C.L.S.

Report on two lots of Devonian fossils from the I.O.E. Triad Ebbut J-70 well located at 62°19'31"N, 121°57'03"W (NTS 951), District of Mackenzie; submitted by N. C. Meijer-Drees, 1975, Institute of Sedimentary and Petroleum Geology, Calgary.

The relevant parts of any manuscript prepared for publication that paraphrase or quote from this report should be referred to the Paleontology Subdivision, Calgary, for possible revision.

<u>Depth & Stratigraphy</u>	<u>Locality, Fauna & Age</u>	<u>GSC Loc. No.</u>
Depth: 1044 ft., core #1, box #4. Top of Horn River Formation at 928 ft.	Location indicated above. <i>Lingula minuta</i> Meek <i>Atrypa?</i> sp. - fragment <i>Leiorhynchus</i> sp. cf. <i>L. awokanak</i> McLaren Echinoderm ossicle with single axial canal Age: mid-Givetian, late Middle Devonian	C-51502
Depth: 1046 ft. core #1, box #4. Top of Horn River Formation at 928 ft.	<i>Leiorhynchus awokanak</i> Age: mid-Givetian, late Middle Devonian	C-51501

Comments

Leiorhynchus awokanak occurs typically in the middle part of the Pine Point Formation of the Great Slave Lake region, and indicates a mid-Givetian (late Middle Devonian) age.

A. W. Norris
A. W. Norris

Paleontology Subdivision
Institute of Sedimentary and Petroleum Geology
Calgary, September 26, 1975

Report on thirty-seven lots of fossils from five wells in northern Yukon Territory and adjacent Mackenzie (NTS 95I, 106M, 116H, I, J).

The relevant parts of any manuscript prepared for publication that paraphrase or quote from this report should be referred to the Western Paleontology Section, Calgary, for possible revision.

IOE Stony I-50

67°29'44"N., 135°22'46"W

Depth 7,417 ft., core GSC loc. C-1452	large ostracodes to Copeland for study
Depth 7,420 ft., core GSC loc. C-1453	? <u>Favosites</u> sp. age: Late Ordovician to Middle Devonian
Depth 7,422 ft., core GSC loc. C-1454	fossil fragments not diagnostic
Depth 7,431 ft., core GSC loc. C-1455	fossil fragments not diagnostic
Depth 7,436 ft., core GSC loc. C-1456	fossil fragments not diagnostic
Depth 7,585-7,595 ft., core GSC loc. C-1457	bone fragments not diagnostic
Depth 8,941 ft., core GSC loc. C-1458	undetermined gastropod not diagnostic
Depth 8,944 ft., core GSC loc. C-1459	indeterminate solitary coral ? <u>Harpidium</u> sp. age: Silurian, possibly Late Silurian
Depth 8,945 ft., core GSC loc. C-1460	echinoderm debris indeterminate coral ? <u>Harpidium</u> sp. age: Silurian, possibly Late Silurian
Depth 8,946 ft., core GSC loc. C-1461	? <u>Harpidium</u> sp. age: Silurian, possibly Late Silurian
Depth 8,947-8,948 ft., core GSC loc. C-1462	pentamerid brachiopod age: Late Ordovician to Devonian

Depth 8,948-8,952 ft., core Catenipora sp.
 GSC loc. C-1463 Favosites 2 spp.
 age: Late Ordovician to Late Silurian

Depth 8,953 ft., core indeterminate ostracode
 GSC loc. C-1464 not diagnostic

Depth 8,954 ft., core indeterminate ostracode
 GSC loc. C-1465 not diagnostic

Depth 8,962 ft., core ?Harpidium sp.
 GSC loc. C-1466 age: Silurian, possibly Late Silurian

Comments: C-1459-C-1462, C-1466 have been sent to A. J. Boucot for further study; C-1452, C-1464-C-1465 have been sent to M. J. Copeland for further study.

Socony Mobil-Western Minerals Cath YT. B-62
66°11'13.5"N., 138°41'53"W

Depth 6,032 1/2 ft., core echinoderm debris
 GSC loc. C-9989 solitary coral
Favosites 2 spp.
Heliolites sp.
 age: Silurian to Middle Devonian

Depth 6,039 ft., core echinoderm debris
 GSC loc. C-9990 Favosites sp.
 age: Late Ordovician to Middle Devonian

Depth 6,040 ft., core Cyrtograptus cf. C. lundgreni Tullberg
 GSC loc. C-9991 Monograptus aff. M. flemingi (Salter)
 age: Silurian, Wenlock

Socony Mobil-Western Minerals S. Tuttle YT. N-5
66°24'51.2"N., 136°46'22.7"W

Depth 8,339 ft., core indeterminate ostracodes
 GSC loc. C-10010 not diagnostic

Depth 8,340 ft., core ?Atrypella sp.
 GSC loc. C-10011 age: probably Silurian, probably Ludlow

Depth 8,897 1/2 ft., core Encrinurus cf. E. princeps Poulsen
 GSC loc. C-10012 age: Silurian, probably Late Llandovery

Depth 8,898 ft., core GSC loc. C-10013	Indeterminate straight cephalopod indeterminate gastropods <u>?Alispira</u> sp. <u>?Pentameroides</u> sp. age: Silurian, probably Late Llandovery or Wenlock
Depth 9,523 ft., core GSC loc. C-10014	echinoderm debris <u>Bighornia</u> sp. <u>Catenipora</u> sp. age: Late Ordovician
Depth 9,530 1/2 ft., core GSC loc. C-10015	<u>Palaeofavosites</u> sp. <u>Palaeophyllum</u> sp. age: Late Ordovician
<u>IOE Triad Ebbutt J-70</u> 62°19'31"N., 121°57'03"W	
Depth 2,616 ft., core GSC loc. C-10016	<u>Palaeofavosites</u> sp. age: Late Ordovician to Late Silurian
Depth 2,625 ft., core GSC loc. C-10016a	<u>?Favistina</u> sp. <u>?Lobocorallium</u> sp. <u>Palaeofavosites</u> 2 spp. age: Late Ordovician
<u>SOBC Blackstone YT. D-77</u> 65°46'10.77"N., 137°14'54.78"W	
Depth 8,180 ft., core GSC loc. C-2929	conulariid (?) not diagnostic
Depth 9,305 ft., core GSC loc. C-2930	<u>Bighornia</u> sp. age: Late Ordovician
Depth 9,310 1/2 ft., core GSC loc. C-2931	<u>Megamvonia</u> sp. indeterminate brachiopods age: Late Ordovician
Depth 9,313-9,314 ft., core GSC loc. C-2932	echinoderm debris indeterminate solitary coral not diagnostic
Depth 9,323 ft., core GSC loc. C-2933	indeterminate brachiopod not diagnostic

Depth 9,323 1/2 ft., core GSC loc. C-2934	<u>Palaeophyllum</u> sp. (small halysitid corallites) age: probable Late Ordovician
Depth 9,324 1/2 ft., core GSC loc. C-2935	undetermined stromatoporoid <u>Palaeophyllum</u> sp. (large halysitid corallites) age: probably Late Ordovician
Depth 9,327 1/2 ft., core GSC loc. C-2936	undetermined stromatoporoid not studied
Depth 9,329 1/2 ft., core GSC loc. C-2937	indeterminate fossil not diagnostic
Depth 9,330 ft., core GSC loc. C-2938	<u>Catenipora</u> sp. age: Middle Ordovician to Late Silurian
Depth 9,335 1/2 ft., core GSC loc. C-2939	echinoderm debris undetermined stromatoporoid <u>Bighornia</u> sp. age: Late Ordovician

B.S. Norford

B.S. Norford

B.S. Norford

Western Paleontology Section
Institute of Sedimentary and Petroleum Geology
Calgary, June 23, 1971

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 20

905 Inad Eblut LSD 5-70 SEC. TWN. RGE. W. Contractor Iri City Type Rig Tandem Month April Day 8 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.												2nd Tour From: 8:00 a.m. To: 4:00 p.m.												3rd Tour From: 4:00 p.m. To: 12:00 p.m.																																																									
DEPTH		From	To	Hole Made	Hole Size	Formation						DEPTH		From	To	Hole Made	Hole Size	Formation						DEPTH		From	To	Hole Made	Hole Size	Formation																																																			
2711																																																																																	
DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.					Size-D.P.		Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.					Size-D.P.		Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.																																																				
DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL						DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL						DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL																																																			
COLLAR		DRILLING STRING					DRILL COLLARS					COLLAR		DRILLING STRING					DRILL COLLARS					COLLAR		DRILLING STRING					DRILL COLLARS																																																		
DATA												DATA												DATA																																																									
BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE			No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE			No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE																																																				
									Drilled	Reamed									Drilled	Reamed									Drilled	Reamed																																																			
		Bit Serial No.					Table R.P.M.							Bit Serial No.					Table R.P.M.							Bit Serial No.					Table R.P.M.																																																		
		Jet or Conventional -					Nozzle Size							Jet or Conventional -					Nozzle Size							Jet or Conventional -					Nozzle Size																																																		
SURVEYS		Kind	at	Ft.	Deg. off			Kind		at	Ft.	Deg. off			Kind		at	Ft.	Deg. off			Kind		at	Ft.	Deg. off			Kind		at	Ft.	Deg. off																																																
SHAFT PUMP RECORD		HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size																																																		
		On Line	Circulating					On Line	Circulating					On Line	Circulating					On Line	Circulating					On Line	Circulating																																																						
No. 1																		PLUG #3 5 SKS AND WELDED																																																															
No. 2																		PLATE 3' BELOW SURFACE																																																															
MUD RECORD		Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS						Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS						Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS																																																				
		BAN PLUG #1-2550-2711																BAN PLUG #2 250-350																RIG RELEASED @ 3:00 PM																																															
		CEMENTED WITH 60 SKS																CEMENTED WITH 60 SKS																APRIL 8 1964																																															
		CEMENT PLUS 1% CACL ₂																CEMENT PLUGS 2% CACL ₂																John A. McFadden																																															
		PLUG DOWN @ 2:05 AM																PLUG DOWN @ 4:00 AM,																																																															
		APRIL 8 1964																APRIL 8 1964																																																															
CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.																																																		
		TOP PLUG #2 208																12H																																																															
DETAIL OF OPERATIONS AND REMARKS			From	To	Hrs.																		From	To	Hrs.																		From	To	Hrs.																																				
		BIG SEAR																TAKE OFF B.O.P.S + Tear																Tear down.																																															
		RUN IN OPEN END																out.																																																															
		BIG TO RUN PLUGS																Run in + Fee For Plug.																																																															
		RUN PLUG #1																12:00 12:30 1/2																																																															
		LAY DOWN PIPE																12:30 3:00 2 1/2																																																															
		RUN PLUG #2																3:00 4:00 1																																																															
		WOC																																																																															
		4:00 8:00 4.																																																																															
Driller		Ed Lamb																Driller																H. J. Jell																Driller																J. Byrd															

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY

DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE HOSE SERIAL No. YES NO

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.

Total Contract Timehrs. Total Company Timehrs. Toolpusher Approved by

Total Contract Time _____ hrs. Total Company Time _____ hrs. Tcolpusher _____ Approved by _____

Form 34402 (300 DRS.-11-82)

20 E 1st & 1st SD J-70 SEC. TWN. RGE. W. Contractor Tri City Hlth Type Rig Fairing Street Month April Day 5 1964

	1st Tour From: 12:00 Midnight To: 8:00 a.m.						2nd Tour From: 8:00 a.m. To: 4:00 p.m.						3rd Tour From: 4:00 p.m. To: 12:00 p.m.																																																			
DEPTH	From		To		Hole Made		Hole Size		Formation		From		To		Hole Made		Hole Size		Formation		From		To		Hole Made		Hole Size		Formation																																			
	2605		2606		1		6 3/4				2606		2614		8						2614		2625		11		6 1/4																																					
DRILLING STRING	Size-D.P.		Stands		Singles		Kelly		Drill. Collar Ft.		Core Bbl. Ft.		Size-D.P.		Stands		Singles		Kelly		Drill. Collar Ft.		Core Bbl. Ft.		Size-D.P.		Stands		Singles		Kelly		Drill. Collar Ft.		Core Bbl. Ft.																													
	3 1/2		37		P.1		24.57		300.22		2 1/2		3 1/2		37		1		11.30 up		238.72		56.23		3 1/2		37		1		1 up		238.72		56.23																													
DRILLING STRING	DRILL		Number		OD		ID		Length		INDICATOR WEIGHT OF TOTAL		DRILL		Number		OD		ID		Length		INDICATOR WEIGHT OF TOTAL		DRILL		Number		OD		ID		Length		INDICATOR WEIGHT OF TOTAL																													
	COLLAR		10		4 3/4		2		300.22		DRILLING STRING		COLLAR		8		4 3/4		2		238.72		DRILLING STRING		COLLAR		8		4 3/4		2		238.72		DRILLING STRING																													
	DATA										2 1/2		DATA										56.000		8,400		DATA								56.00																													
BIT RECORD	No.		Type		Time On Bottom At		Time Pulled At		Total Hours Run		Depth Pulled		Weight On Bit M Pounds		FOOTAGE		No.		Type		Time On Bottom At		Time Pulled At		Total Hours Run		Depth Pulled		Weight On Bit M Pounds		FOOTAGE		No.		Type		Time On Bottom At		Time Pulled At		Total Hours Run		Depth Pulled		Weight On Bit M Pounds		FOOTAGE																	
	22		WTR						3 1/2		2606		2m		1		65		6		D		11:30				4 1/2		10		8		6		D		11:30		11		2625		10		19																			
	Bit Serial No. 72616										Table R.P.M. 120										Bit Serial No. EC2401										Table R.P.M. 85										Bit Serial No. EC2401										Table R.P.M. 85													
	Jet or Conventional -										Nozzle Size										Jet or Conventional -										Nozzle Size										Jet or Conventional -										Nozzle Size													
SURVEYS	Kind		at		Ft.		Deg. off		HOURS		Pump Press		Length of Pump Stroke		Strokes Per Min.		Liner Size		Kind		at		Ft.		Deg. off		HOURS		Pump Press		Length of Pump Stroke		Strokes Per Min.		Liner Size		Kind		at		Ft.		Deg. off																					
	On Line		Circulating						800		12"		70		5 1/2		4 1/2		On Line		Circulating						900		12"		58		5 1/2		6 1/2		On Line		Circulating						900		12		56		5 1/2													
	No. 1		No. 2																																																													
MUD RECORD	Time		Visc.		Wt.		W L		pH		ADDITIVES — POUNDS		Time		Visc.		Wt.		W L		pH		ADDITIVES — POUNDS		Time		Visc.		Wt.		W L		pH		ADDITIVES — POUNDS		Time		Visc.		Wt.		W L		pH		ADDITIVES — POUNDS																	
	10:00		28		8.7								12:00		28		8.6								8:00		8.6		28																																			
	2:00		28		8.6																																																											
CORING	From		To																																																													

DING UP & DRLG. OUT:
LING:
MING:

CLASSES OF TIME BREAKDOWN

TOTCO:	CONDITIONING MUD:
FISHING:	TRIPPING:
CIRCULATING:	CORING:

CASING:
W.O.C.
D.S. TEST

LOGGING:
W. O. ORD
RIG REPAIR

LOGGING:
W. O. ORDERS:
RIG REPAIRS:

RIG MAINTENANCE:
MISCELLANEOUS:
CONDITION HOLE:

REAMING CLEANING:
WORKING PIPE:
LOST CIRC.:

MNER. DRILLING LINE IN USE

REEL SERIAL No.

MNFR. OF KELLY HOSE IN USE

---HOSE SERIAL No

**DID YOU CHECK BLOWOUT
PREVENTER EQUIPMENT TODAY**

YES ----- NO -----

Total Contract Timehrs.

Total Company Timehrs.

Toolpusher

Approved by _____

Approved by

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 16

20E Inad Elhat LSD 5-70 SEC. TWN. RGE. W. Contractor *Imperial Oil* Type Rig *Swivel* Month *April* Day *4* 19*64*

1st Tour From: 12:00 Midnight To: 8:00 a.m.										2nd Tour From: 8:00 a.m. To: 4:00 p.m.										3rd Tour From: 4:00 p.m. To: 12:00 p.m.														
DEPTH		From	To	Hole Made	Hole Size	Formation				From		To	Hole Made	Hole Size	Formation				From		To	Hole Made	Hole Size	Formation										
		2518	2550	22'	6 3/4					2550		2584	34	6 3/4					2584		2605	21	6 3/4											
DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.				Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.				Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.									
		3 1/2	36	1	19.38	300.22					3 1/2	37		16.08	300.22					3 1/2	37	1	25	300.22										
DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL										
COLLAR		19	4 3/4	2"	200.22	DRILLING STRING				COLLAR	10	4 3/4	2"	300.22	DRILLING STRING				COLLAR	10	4 3/4	2"	300.22	DRILLING STRING										
DATA						58M				DATA					58 000				DATA					56M										
BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled Reamed	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled Reamed	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled Reamed									
		19	DWC	1:30		6 1/4		25M	32	20	WTR	11:45		6 1/4		25	34	40	20	WTR	5:30	7:12	2602	25M	52	21	WTR	10:30	11:00	3 1/4	2605	25M	3	100
		Bit Serial No. 22195				Table R.P.M. 65				Bit Serial No. 39388				Table R.P.M. 65				Bit Serial No. 39388				Table R.P.M. 65				Bit Serial No. 39388				Table R.P.M. 65				
		Jet or Conventional -				Nozzle Size				Jet or Conventional -				Nozzle Size				Jet or Conventional -				Nozzle Size				Jet or Conventional -				Nozzle Size				
SURVEYS		Kind	at		Ft.		Deg. off		Kind	at		Ft.		Deg. off		Kind	at		Ft.		Deg. off													
HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size									
No. 1		6 1/4				800	12"	70	5 1/2	4 1/4				850	12"	70	5 1/2																	
No. 2																																		
MUD RECORD		Time	Visc.	Wt.	W. L.	pH	ADDITIVES — POUNDS				Time	Visc.	Wt.	W. L.	pH	ADDITIVES — POUNDS				Time	Visc.	Wt.	W. L.	pH	ADDITIVES — POUNDS									
		12:00	28	8.8							10:00	28	8.6							7:00	29	8.6												
		2:00	23	8.8							12:00	28	8.6																					
		4:00	23	8.8							2:00	28	8.6																					
		6:00	28	8.8																														
CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.				From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.				From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.									
DETAIL OF OPERATIONS AND REMARKS		From		To		Hrs.						From		To		Hrs.						From		To		Hrs.								
		12:00		12:15		1/4		Finish Hoist				8:00		8:30		1/2		DRILL				4:00		5:00		1 1/4		DRILL						
		12:15		1:15		1		Service + Slip line.				8:30		9:00		1/2		BIG SERVICE				5:00		5:15		1/4		DRILL						
		1:15		1:30		1/4		Run in With Bit.				9:00		9:45		3/4		DRILL				5:15		5:30		1/4		TRIP FOR BIT						
		1:30		7:45		6 1/4		Ream out of Gauge Hole.				9:45		11:45		2		TRIP FOR BIT				5:30		7:45		2 1/4		REAM 100' UNDEGAGE HOLE						
		7:45		8:00		1/4		DRILL 6 3/4 Hole.				11:45		4:00		1 1/4		REAM 100' UNDEGAGE HOLE				7:45		10:30		2 3/4		DRILL						
																						10:30		11:00		1/2		CIRC SAMPLE						
																						11:00		11:15		1/4		HOIST BIT NO 21						
																						11:15		12:00		3/4								
Driller		<i>Ed Lamb</i>				Driller				<i>H. Jandl</i>				Driller				<i>Jim Burt</i>																

HEADING UP & DRLG. OUT:
DRILLING:
REAMING:CLASSES OF TIME BREAKDOWN
TOTCO: CONDITIONING MUD:
FISHING: TRIPPING:
CIRCULATING: CORING:CASING:
W.O.C.
D.S. TESTING:LOGGING:
W. O. ORDERS:
RIG REPAIRS:RIG MAINTENANCE:
MISCELLANEOUS:
CONDITION HOLE:REAMING CLEANING:
WORKING PIPE:
LOST CIRC.:

MNFR. DRILLING LINE IN USE

REEL SERIAL No.

MNFR. OF KELLY HOSE IN USE

HOSE SERIAL No.

DID YOU CHECK BLOWOUT
PREVENTER EQUIPMENT TODAY

YES NO

Total Contract Time hrs.

Total Company Time hrs.

Toolpusher

Approved by

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. H-15

Lead Echert LSD J-70 SEC. TWN. RGE. W. Contractor Imperial Oil Type Rig Farber Start Month April Day 3 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.										2nd Tour From: 8:00 a.m. To: 4:00 p.m.										3rd Tour From: 4:00 p.m. To: 12:00 p.m.																		
DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation												
		2392	2461	69	6 3/4							2461	2474	13	6 3/4							2474	2518	44	6 3/4													
DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.				DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.				DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.									
		3 1/2	35		16.70	300.22							3 1/2	35		3.70 up	300.22							3 1/2	36		20 up	300.22										
DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL												
COLLAR		10	4 3/4	2	300.22	DRILLING STRING				COLLAR		10	4 3/4		300.22	DRILLING STRING				COLLAR		10	4 3/4	2	300.22	DRILLING STRING												
DATA						55M				DATA						56000				10,500				DATA						56M								
BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE							
		17	OWC	7:00		12 3/4		25M	130				17	OWC	7:00	8:30	13	2464	25	133				18	OWC	4:30	11:00	6 1/2	2518	25M	44							
SURVEYS		Kind at Ft. Deg. off				Kind at Ft. Deg. off				SURVEYS		Kind at Ft. Deg. off				Kind at Ft. Deg. off				SURVEYS		Kind at Ft. Deg. off				Kind at Ft. Deg. off												
PUMP RECORD		HOURS				Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	PUMP RECORD		HOURS				Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	PUMP RECORD		HOURS				Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size									
		On Line	Circulating									On Line	Circulating									On Line	Circulating															
		7 3/4				800	12"	70	5 1/2							800	12"	60	5 1/2"			6 1/2				800	12	92	5 1/2"									
MUD RECORD		Time	Visc.	Wt.	W.L.	pH	ADDITIVES — POUNDS				MUD RECORD		Time	Visc.	Wt.	W.L.	pH	ADDITIVES — POUNDS				MUD RECORD		Time	Visc.	Wt.	W.L.	pH	ADDITIVES — POUNDS									
		12:00	28	8.6									12:00	28	8.6									6:00	28	8.7												
		2:00	28	8.6									2:00	28	8.7									8:00	28	8.7												
		4:00	28	8.6																				10:00	28	8.7												
		6:00	28	8.6																																		
CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.				CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.				CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.									
													2464	2474	10																							
DETAIL OF OPERATIONS AND REMARKS						From	To	Hrs.					DETAIL OF OPERATIONS AND REMARKS						From	To	Hrs.					DETAIL OF OPERATIONS AND REMARKS						From	To	Hrs.				
						12:00	12:15	1/4	DRILL 6 3/4 Hole.										8:00	8:15	1/4	RUN IN & SERVICE RIG										4:00	4:15	1/4				
						12:15	8:00	7 3/4	SERVICE — Check B.O.P.										8:15	8:30	1/4	REAM RATHOLE										4:15	4:30	1/4				
									TRIP TO RUN Core barrel										8:30	10:15	1 3/4	DRILL										4:30	11:00	6 1/2				
									Circ hole.										10:15	10:30	1/4	TRIP FOR BIT										11:00	12:00	1				
									Work on oil line.										10:30	10:45	1/4																	
									Coring.										10:45	11:00	1/4																	
									Work on Pump.										11:00	11:30	1/2																	
									Coring.										11:30	2:15	2 3/4																	
									Host To Recover Core.										2:15	3:00	3/4																	
									Recover Core, Stand back bbl.										3:00	3:30	1/2																	
									Run in with bit.										3:30	4:00	1/2																	
Driller		<u>E. J. Kramel</u>								Driller		<u>Jim Byrd</u>								Driller		<u>Jim Byrd</u>																

HEADING UP & DRG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY

DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE HOSE SERIAL No. YES NO

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

Total Contract Timehrs. Total Company Timehrs. Toolpusher Approved by

Total Contract Time _____ hrs. Total Company Time _____ hrs. Toolpusher _____ Approved by _____

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 13

205 East E. Street LSD J-70 SEC. TWN. RGE. W. Contractor Tri City Drilling Type Rig Traylor Month April Day 1 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH	From		To		Hole Made	Hole Size	Formation	From		To		Hole Made	Hole Size	Formation	From		To		Hole Made	Hole Size	Formation			
	From	To	From	To				From	To	From	To													
	2268	2323	55	6 3/4				2323	2331	8	6 3/4													
DRILLING STRING	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.				
	3 1/2	32	1	2' up	300.22			3 1/2	33		24.79 up	300.22												
	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL		DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL		DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				
	COLLAR	10	4 3/4	2	300.22	DRILLING STRING	DRILL COLLARS		COLLAR	10	4 3/4	2	300.22	DRILLING STRING	DRILL COLLARS		COLLAR				DRILLING STRING	DRILL COLLARS		
DATA					55m			DATA				55000	10,500		DATA									
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE
	16	W-7	1.30		6		25m	55	16	W-7	1.30		6 1/2		25m	63								
	Bit Serial No.	6913				Table R.P.M.	75		Bit Serial No.	6913				Table R.P.M.	75		Bit Serial No.					Table R.P.M.		
	Jet or Conventional					Nozzle Size			Jet or Conventional					Nozzle Size		Jet or Conventional					Nozzle Size			
SURVEYS	Kind	at		Ft.		Deg. off			Kind	at		Ft.		Deg. off			Kind	at		Ft.		Deg. off		
	HOURS	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size		HOURS	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size		HOURS	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	
		6		850	12"	70	5 1/2			6		825	12"	5 1/2		6								
		No. 1	No. 2							No. 1	No. 2							No. 1	No. 2					
MUD RECORD	Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS			Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS			Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS		
	2	28	8.8						8:00	28	8.8													
	4	28	8.8																					
	6	28	8.8																					
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.				
DETAIL OF OPERATIONS AND REMARKS			From	To	Hrs.			From	To	Hrs.			From	To	Hrs.			From	To	Hrs.				
	FINISH HOIST BIT #15		12:00	12:15	1/4	DRILL 6 3/4 Hole.		8:00	8:15	1/4	WAIT ON REPAIRS		4:00	4:00	8									
	Rig SERV		12:15	12:30	1/4	SERVICE + CHECK B.O.P.		8:15	8:30	1/4														
	RUN BIT #16		12:30	1:30	1	DRILL 6 3/4 Hole.		8:30	8:45	1/4														
	DRILL 6 3/4" HOLE		1:30	2:15	3/4	WAIT FOR TRANSFER CASE		8:45	4:00	7 1/4														
	REPAIR MUD LINE		2:15	2:45	1/2	PARTS.																		
	DRILL		2:45	8:00	5 1/4																			
					8																			
Driller		Ed. Lander				Driller		H. Jandl				Driller		Jim Burt										

CLASSES OF TIME BREAKDOWN

HEADING UP & DRUG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY
 DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE HOSE SERIAL No. YES NO
 REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.

Total Contract Timehrs. Total Company Timehrs. Toolpusher Approved by

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 12

208 Road Elberta T-70 SEC. TWN. RGE. W. Contractor Irwin City, Ind. Type Rig Tarington Start Month Jan Day 31 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.										2nd Tour From: 8:00 a.m. To: 4:00 p.m.										3rd Tour From: 4:00 p.m. To: 12:00 p.m.												
DEPTH		From	To	Hole Made	Hole Size	Formation				From		To	Hole Made	Hole Size	Formation				From		To	Hole Made	Hole Size	Formation								
		2057	2109	6 3/4	52' HOLE					2109		2203	94	6 3/4					2203		2268	65	6 3/4									
DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.			Size-D.P.		Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.			Size-D.P.		Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.							
		3 1/2	29		3' P	300.22				3 1/2		30	1	DOWN.	300.22				3 1/2		22	0	26' up	300.22								
DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL						
COLLAR		10	4 3/4	2	300.22	DRILLING STRING				COLLAR		10	4 3/4	2	300.22	DRILLING STRING				COLLAR		10	4 3/4	2	300.22	DRILLING STRING						
DATA										DATA		50 000				10:500				DATA		50 M										
BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		No.		Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		No.		Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE			
		14	OWC			18 1/2	2101	25M	190			15	OWC	7:00		8 1/4		24	102			15		OWC	11:30	15 1/2	2268	25M	167			
		15	OWC			3 1/4	8	25M	8'																							
		Bit Serial No. 47750				Table R.P.M. 75						Bit Serial No. 47750				Table R.P.M. 75						Bit Serial No. 47750				Table R.P.M. 75						
		Jet or Conventional -				Nozzle Size						Jet or Conventional -				Nozzle Size						Jet or Conventional - CON.V.				Nozzle Size						
SURVEYS		Kind	at		Ft.		Deg. off				Kind		at		Ft.		Deg. off				Kind		at		Ft.		Deg. off					
PUMP RECORD		HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size			HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size			HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size			HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	
		On Line	Circulating							On Line		Circulating						On Line		Circulating						On Line		Circulating				
				725	12"		5 1/2			7 1/2			725	12"	72	5 1/2			7 1/4			800	12	72			7 1/4			800	12	72
MUD RECORD		Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS				Time		Visc.	Wt.	W L	pH	ADDITIVES — POUNDS				Time		Visc.	Wt.	W L	pH	ADDITIVES — POUNDS					
		12	28	8.8							8:00		28	8.8							4:00		28	8.8								
		2	28	8.8							10:00		28	8.8							6:00		28	8.8								
		4	28	8.9							12:00		29	8.7							8:00		28	8.8								
											2:00		28	8.8							10:00		28	8.8								
CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.				From		To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.				From		To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.					
DETAIL OF OPERATIONS AND REMARKS				From	To	Hrs.					From		To	Hrs.							From		To	Hrs.								
		Rig Service		12:00	12:15	1/4					Circ. Sample		8:00	8:15	1/4							SURVEY @ 2203 + Rig Service		4:00	4:15	1/4						
		DRLG		12:15	2:45	2 1/2					Service + Check B.O.P		8:15	8:30	1/4							DRLG		4:15	11:30	7 1/4						
		Work on Pump Valves		2:45	3:00	1/4					DRILL 6 3/4 Hole		8:30	4:00	7 1/2							Hoist Bit No 15		11:30	12:00	1/2						
		DRLG		3:00	4:45	1 3/4																										
		TRIP		4:45	6:30	1 3/4																										
		REAM 30'		6:30	7:00	1/2																										
		DRLG		7:00	8:45	3/4																										
		CIRC SAMPLE		7:45	8:00	1/4																										
Driller		Ed Land								Driller		H. Jendel								Driller		Jim Burt										

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY

DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE HOSE SERIAL No. YES NO

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

Total Contract Time _____ hrs. Total Company Time _____ hrs. Toolpusher _____ Approved by _____

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 11

20 S. Lead Elbert LSD. I-70 SEC. TWN. RGE. W. Contractor Lin City, Miss Type Rig Farling Strait Month March Day 3 1968

1st Tour From: 12:00 Midnight To: 8:00 a.m.										2nd Tour From: 8:00 a.m. To: 4:00 p.m.										3rd Tour From: 4:00 p.m. To: 12:00 p.m.										
DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation				
		1911			6 3/4							1911	1982	71	6 3/4							1982	2057	75	6 3/4					
DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.			DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.			DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.			
		3 1/2	26		17' up	300.22						3 1/2	27		7.77 up	300.22						3 1/2	28	1	24' up	300.22				
BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		No.		Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		No.		Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE	
		14	OWC								14		OWC	9:5		6 1/2		24	71			14		OWC			14 1/4		25	146
SURVEYS		Kind at Ft. Deg. off								Kind at Ft. Deg. off								Kind at Ft. Deg. off												
PUMP RECORD		HOURS								HOURS								HOURS												
		On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size					On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size					On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size			
MUD RECORD		Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS			Time		Visc.	Wt.	W L	pH	ADDITIVES — POUNDS			Time		Visc.	Wt.	W L	pH	ADDITIVES — POUNDS					
		D.S.T. #2		1700		1750	STRADDLE			9:00		28	8.9						4:00		28	8.8								
		ESI		90	MIN					11:00		28	8.7						6:00		28	8.9								
		VO		60	MIN					1:00		28	8.9						8:00		29	8.5								
		WCE SI		90	MIN					3:00		28	8.8						10:00		29	8.5								
CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.			From		To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.			From		To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.					
		WEAK BLOW DEAD IN 1 MIN.																												
DETAIL OF OPERATIONS AND REMARKS		MAKE UP PACKER							SERVICE + check B.O.P.							DRUG.														
		Rig SEAU							Run in hole.							Rig SERVICE														
		Run in D.S.T. #2							Work on shale shaker.							DRUG														
		TESTING							DRILL 6 3/4 Hole.																					
		Hoist D.S.T. #2							Change shaker screen.																					
		LAY DOWN TOOL							DRILL 6 3/4 Hole.																					
		Run in with bit																												

Driller Ed LambDriller H. JandlDriller Jim BurtHEADING UP & DRLG. OUT:
DRILLING:
REAMING:CLASSES OF TIME BREAKDOWN
TOTCO:
FISHING:
CIRCULATING:CONDITIONING MUD:
TRIPPING:
CORING:CASING:
W.O.C.
D.S. TESTING:LOGGING:
W. O. ORDERS:
RIG REPAIRS:RIG MAINTENANCE:
MISCELLANEOUS:
CONDITION HOLE:REAMING CLEANING:
WORKING PIPE:
LOST CIRC.:MNFR. DRILLING LINE IN USE
MNFR. OF KELLY HOSE IN USE

REEL SERIAL No.

HOSE SERIAL No.

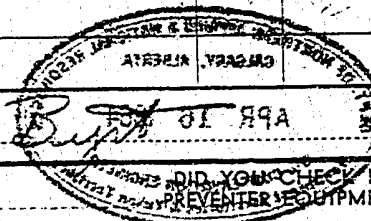
YES NO

Total Contract Time _____ hrs.

Total Company Time _____ hrs.

Toolpusher _____

Approved by _____

DID YOU CHECK BLOWOUT
PREVENTER EQUIPMENT TODAY

Total Contract Timehrs. Total Company Timehrs. Toolpusher Approved by

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. #8
 20E Road, Elbert, LSD. J-70C TWN. RGE. W. Contractor Lee City, Ark Type Rig Taylor Steel 90 Month March Day 27 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.															2nd Tour From: 8:00 a.m. To: 4:00 p.m.															3rd Tour From: 4:00 p.m. To: 12:00 p.m.																				
DEPTH		From	To	Hole Made	Hole Size	Formation									From	To	Hole Made	Hole Size	Formation									From	To	Hole Made	Hole Size	Formation																		
		1290	1390	100'	6 3/4										1390	1465	75	6 3/4										1415	1524	59	6 3/4																			
DRILLING STRING	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.									Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.									Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.																
		3 1/2	17	1	20' up	300.22									3 1/2	18	1	6.89 up	300.22									3 1/2	19	1	8' up	300.22																		
	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL									DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL									DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL																
	COLLAR	10	4 3/4	2	300.22	DRILLING STRING									COLLAR	10	4 3/4	2	300.22	DRILLING STRING									COLLAR	10	4 3/4	2	300.22	DRILLING STRING																
DATA		42 m													DATA		44 000 10.500													DATA		44 171																		
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE							No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE							No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE														
								Drilled	Reamed														Drilled	Reamed														Drilled	Reamed											
	9	6 3/4	000		8:5		24m	105										9	000	11:30	12:45	12 3/4	1452	24m	167										10	000	2:45	1:14	1 1/4	24m	13									
Bit Serial No. <u>47739</u> Table R.P.M. <u>70</u>															Bit Serial No. <u>47739</u> <u>(10)</u> <u>76503</u> Table R.P.M. <u>75</u>															Bit Serial No. <u>76503</u> Table R.P.M. <u>75</u>																				
Jet or Conventional - <u> </u> Nozzle Size <u> </u>															Jet or Conventional - <u> </u> Nozzle Size <u> </u>															Jet or Conventional - <u>Conv</u> Nozzle Size <u> </u>																				
SURVEYS	Kind	at <u> </u> Ft. <u> </u> Deg. off <u> </u>													Kind	at <u> </u> Ft. <u> </u> Deg. off <u> </u>													Kind	at <u> </u> Ft. <u> </u> Deg. off <u> </u>																				
	HOURS															HOURS															HOURS																			
	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size										On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size										On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size														
No. 1	7 1/4		7:00	12"	72	5 1/2										5 1/4		7:00	12"	72	5 1/2																													
No. 2																																																		
MUD RECORD	Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS									Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS									Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS																
	12:00	28	8.9												8:00	28	8.9												4:00	27	8.8																			
	2	28	8.9												10:00	28	8.8												6:00	27	8.9																			
	4	28	8.9												12:00	28	8.9												8:00	27	8.9																			
	6	28	8.9												3:00	28	8.9																																	
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.										From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.										From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.														
DETAIL OF OPERATIONS AND REMARKS																																																		

Driller Ed LenchDriller H. JandlDriller Jim Bueh
 CLASSES OF TIME BREAKDOWN
 HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY
 DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE HOSE SERIAL No. YES NO
 REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

 Total Contract Time hrs. Total Company Time hrs. Toolpusher Approved by

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 7

 908.1m Ebbot LSD J-70 SEC TWN. RGE. W. Contractor *Imperial Oil* Type Rig *Trailing Strat-90 Month* Day *26* 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.												2nd Tour From: 8:00 a.m. To: 4:00 p.m.												3rd Tour From: 4:00 p.m. To: 12:00 p.m.																																									
DEPTH		From	To	Hole Made	Hole Size	Formation						DEPTH		From	To	Hole Made	Hole Size	Formation						DEPTH		From	To	Hole Made	Hole Size	Formation																																			
		1135	1210	75	6 3/4									1210	1263	53	6 3/4									1263	1290	27	1 1/16																																				
DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.					Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.					Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.																																						
		3 1/2	14	1	19.56 up	300.22						3 1/2	15	1	23 up	300.22	56.23					3 1/2	15	1	DWN.	300.22																																							
DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL						DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL						DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL																																			
COLLAR		10	4 3/4	2	200.22	DRILLING STRING						COLLAR		10	4 3/4	2	300.22	DRILLING STRING						COLLAR		10	4 3/4	2	300.22	DRILLING STRING																																			
DATA		42m										DATA		40000 10.500										DATA		42m																																							
BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M. Pounds	FOOTAGE			No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M. Pounds	FOOTAGE			No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M. Pounds	FOOTAGE																																				
		47	DWV		12:15	4 3/4	1135		0	100			9	DWC	2:45	100	9 3/4	1260	20m	125				6	DWC	11:30	4:45	5 3/4	1285	16m	25																																		
		8	DWC	2:45		5 1/4		20m	75				6	D	2:45 AM		1		10	3				9	DWC	11:30	4:45	5 3/4	1285	16m	25																																		
		Bit Serial No. 47728										Table R.P.M. 150												Bit Serial No. 47728 @ EC 2401										Table R.P.M. 150												Bit Serial No. EC 2401										Table R.P.M. 100									
		Jet or Conventional -										Nozzle Size												Jet or Conventional -										Nozzle Size												Jet or Conventional -										Nozzle Size									
SURVEYS		Kind	at		Ft.		Deg. off		Kind		at		Ft.		Deg. off		Kind		at		Ft.		Deg. off																																										
HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size																																				
No. 1						600	12"	72	5 1/2	4 1/2						600	12"	72	5 1/2	1						750	12"	60	5 1/2																																				
No. 2																																																																	
MUD RECORD		Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS						Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS						Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS																																				
		4:00	28	8.8									8:00	28	9.1									4:00	28	8.9			WATER																																				
		6:00	28	8.8									10:00	28	9.0									6:00	28	8.8																																							
													12:00	28	9.0									8:00	28	8.8																																							
													3:00	28	8.9																																																		
CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.																																												
									1260	1263			4	Johnstone		1260																																																	
DETAIL OF OPERATIONS AND REMARKS		WORK BIT ON RUN										DRILL 6 3/4 Hole.										CUT CORE No. 4																																											
		HOIST (PIECE OF TONG DIE IN CORE)										SERVICE RIG + CHECK B.O.P.										HOIST CORE No. 4																																											
		RIG SERV										RUN SURVEY @ 1229 - 3/4										RECOVER CORE RIG SERVICE +																																											
		MAKE UP MAGNET & RUN IN										DRILL 6 3/4 Hole.										STAND BACK C.B.																																											
		WORK MAGNET										TRIP TO RUN CORE BARREL.										WATER WORK UNFERT.																																											
		HOIST MAGNET & RECOVER										Circ. hole.										RUN IN HOLE																																											
		PART OF TONG DIE & 8 BIT BEARING										CORING.										REAM RIG HOLE																																											
		RUN IN WITH BIT										WORK ON PUMP.										DRAG.																																											
		DRAG 6 3/4" HOLE										CAT CORE # 4																																																					
		Driller: <i>Ed Lamb</i>										Driller: <i>H. Jandl</i>										Driller: <i>Jim B. J.</i>																																											

CLASSES OF TIME BREAKDOWN
 HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY
 DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE HOSE SERIAL No. YES NO
 REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

Total Contract Timehrs. Total Company Timehrs. Toolpusher Approved by

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 6

20E Inland Ebbett LSD J-70 SEC. TWN. RGE. W. Contractor In City Drilling Type Rig Swing Stand Month June Day 25 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.										2nd Tour From: 8:00 a.m. To: 4:00 p.m.										3rd Tour From: 4:00 p.m. To: 12:00 p.m.													
DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation							
		1059	1073	14'	6 3/4"							1073	1117	44'	6 1/16"							1117	1135	18'	6 3/4"								
DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.			DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.			DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.						
		3 1/2	11		35.80	300.22	56.74					3 1/2	13		21.01 up.	300.22						3 1/2	13		3 up	300.22							
DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL							
COLLAR		10	4 3/4	2	300.22	DRILLING STRING				COLLAR		10	4 3/4	2	300.22	DRILLING STRING				COLLAR		10	4 3/4	2	300.22	DRILLING STRING							
DATA										DATA						40 000				10.500				DATA						41 m			
BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M. Pounds	FOOTAGE		BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M. Pounds	FOOTAGE		BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M. Pounds	FOOTAGE		
		6	◇	230		15		12m	43				6	◇	230	1075	16 1/2	1076	12m	46				5	OSC		200	9 1/2		20m	103		
		5	OSC	12 45		7 1/2		20m	85	46			5	OSC	12 45	7 1/2	20m	85	46				7	OSC	1130		3 1/2 reaming				100		
		Bit Serial No. EC 2401				Table R.P.M. 80						Bit Serial No. EC 2401 ③ 84491				R.C. run Table R.P.M. 80						Bit Serial No. 84491				48283 Table R.P.M. 150							
		Jet or Conventional -				Nozzle Size						Jet or Conventional -				Nozzle Size						Jet or Conventional - CONV				Nozzle Size							
SURVEYS		Kind	at		Ft.		Deg. off		SURVEYS		Kind	at		Ft.		Deg. off		SURVEYS		Kind	at		Ft.		Deg. off		SURVEYS						
HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size				
No. 1						875	12'	60	5 1/2	No. 1						800	12"	60	5 1/2	No. 1													
No. 2										No. 2						600	12"	72	5 1/2	No. 2													
MUD RECORD		Time	Visc.	Wt.	W.L.	pH	ADDITIVES — POUNDS			MUD RECORD		Time	Visc.	Wt.	W.L.	pH	ADDITIVES — POUNDS			MUD RECORD		Time	Visc.	Wt.	W.L.	pH	ADDITIVES — POUNDS						
		12	28	9.0								8:00	28	9.								4:00	28	9.3									
		2	28	9.0								12:00	28	9.								5:00	28	8.9									
		4	28	9.0								2:00	27	9.2								10:00	28	8.9									
CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.			CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.			CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.						
		1052	1059	7		2	Johnston					1059	1076	17		3	Johnston																
		1059	1073	14'		3																											
DETAIL OF OPERATIONS AND REMARKS						From	To	Hrs.	DETAIL OF OPERATIONS AND REMARKS								From	To	Hrs.	DETAIL OF OPERATIONS AND REMARKS								From	To	Hrs.			
		CUT COR # 2				12:00	12:30	1/2	SERVICE RIG + CHECK B.O. 8:00				8:15	9:15	1/4	DRILL				4:00	6:00	2											
		HOIST JARVIS CORE BBL				12:30	1:15	3/4	CUT CORE # 3				8:15	9:30	1 1/4	TAP FOR B.T.				6:00	7:15	1 1/4											
		RECOVER CORE				1:15	1:30	1/4	WORK ON PUMP				9:30	10:15	3/4	WORK ON PUMP				7:15	7:45	1/2											
		RIG SERVICE				1:30	1:45	1/4	HOIST TO RECOVER CORE				10:15	10:45	1/2	REAM NO UNDERGAGE HOLE				7:45	11:15	3 1/2											
		RUN IN WITH CORE BBL				1:45	2:15	1/2	RECOVER CORE + STAND BACK BBL				10:45	11:15	1/2	WORK ON PUMP				11:15	11:30	1/4											
		CIRC CORE BBL				2:15	2:30	1/4	RUN IN W. BIT				11:15	11:45	1/2	TRY TO GET PAST BEARINGS				11:30													
		CUT CORE # 3				2:30	8:00	5 1/2	REAM RAT HOLE				11:45	12:45	1	LEAF IN HOLE					12:00	1/2											
									DRILL 6 3/4 HOLE				12:45	4:00	3 1/4																		
Driller		Ed Kamel				Driller				H. Jandl				Driller				Jimm Burt															

CLASSES OF TIME BREAKDOWN: HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE: REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY: YES ☒ NO ☐

Total Contract Time _____ hrs. Total Company Time _____ hrs. Toolpusher _____ Approved by _____

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 5

LOS Angeles, CALIF. TSD. J- SEC. 70 TWN. RGE. W. Contractor *Imperial Oil* Type Rig *Landrig* Start Month *Mar* Day *24* 19*64*

1st Tour From: 12:00 Midnight To: 8:00 a.m.										2nd Tour From: 8:00 a.m. To: 4:00 p.m.										3rd Tour From: 4:00 p.m. To: 12:00 p.m.													
DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation							
		890	1012	122	6 3/4	SHALE						1012	1041	29	6 1/16	Limestone						1041	1059	18	6 1/16								
DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.			DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.			DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.						
		3 1/2	11		4 1/2	300.22						3 1/2	11		30.00 up	300.22	56.74					3 1/2	11		14 1/2	300.22	56.74						
DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL							
COLLAR		10	4 3/4	2 1/4	300.22	DRILLING STRING				COLLAR		10	4 3/4	2	300.22	DRILLING STRING				COLLAR		10	4 3/4	2	300.22	DRILLING STRING							
DATA										DATA						38000				10,500				DATA						38 M			
BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		No.		Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		No.		Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE				
		4	DSC		5 00	15 3/4	986	800	340				5	DSC	5 00	10 1/2	3 1/4	1030	8	44				6	D			9		10 M 29			
		5	DSC	6 15									6	D	12 15		3 1/4		10	11													
		Bit Serial No. 2392-84491				Table R.P.M. 150						Bit Serial No. 84491 EC2401				Table R.P.M. 94						Bit Serial No. EC2401				Table R.P.M. 80							
		Jet or Conventional -				Nozzle Size						Jet or Conventional -				Nozzle Size						Jet or Conventional -				Nozzle Size							
SURVEYS		Kind	S.S. at 893' Ft.		3/4 Deg. off						Kind		at Ft.		Deg. off						Kind		at Ft.		Deg. off								
PUMP RECORD		HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size			HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size			HOURS		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size										
No. 1		On Line	Circulating							On Line		Circulating						On Line		Circulating													
No. 2		6		600	12"	72	5 1/2			4 3/4		1	600	12"	60	5 1/2			5 3/4			900	12	58	5 1/2								
MUD RECORD		Time	Visc.	Wt.	W.L.	pH	ADDITIVES - POUNDS		Time		Visc.	Wt.	W.L.	pH	ADDITIVES - POUNDS		Time		Visc.	Wt.	W.L.	pH	ADDITIVES - POUNDS										
		12	28	9.2					8 00		30	9.7					4 00		30	9.7			WATER										
		2	29	9.5					12 15		29	9.7					6 00		30	9.7													
		4 00	30	9.7					2 45		31	9.7					10 00		28	9													
CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From		To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From		To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.												
								8 1030		1041	11		1	JOHNSTON	1030		1052	22	22	1	JOHNSTON												
DETAIL OF OPERATIONS AND REMARKS		From	To	Hrs.	From		To	Hrs.	From		To	Hrs.	From		To	Hrs.																	
		Rig SERV	12 00	12 15	DRILL 6 3/4 Hole.		8 00	8 15	CUT CORE No 1		4 00	7 00	3																				
		SURVEY	12 15	12 30	SERVICE RIG + CHECK B.O.P		8 15	8 30	HOIST CORE No 1		7 00	7 45	3 1/4																				
		DRILL	12 30	4 45	DRILL 6 3/4 Hole.		8 30	9 45	RECOVER CORE		7 45	8 00	1/4																				
		SURVEY	4 45	5 00	Circ Hole.		9 45	10 15	RIG SERVICE		8 00	8 15	1/4																				
		TRIP	5 00	6 15	Hoist to CORE.		10 15	10 45	PUMP OUT PIT		8 15	8 30	1/4																				
		DRILL	6 15	8 00	Pickup Core barrel + make up.		10 45	11 45	RUN IN W/ C.B.		8 30	9 00	1/2																				
					RUN IN Hole.		11 45	12 15	CIRC. CORE Bbl		9 00	9 15	1/4																				
					Circ CORE BARREL.		12 15	12 45	CUT CORE No 2		9 15	12 00	2 1/4																				
					Cut Core # 1		12 45	4 00																									
Driller		<i>E. L. Lumb</i>				Driller				<i>H. Jandl</i>				Driller				<i>Jim Burt</i>															

HEADING UP & DRLG. OUT: TOTCO: FISHING: REAMING: DRILLING: REAMING: CIRCULATING: CORING: CLASSES OF TIME BREAKDOWN: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE: REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY: YES NO

Total Contract Time _____ hrs. Total Company Time _____ hrs. Toolpusher _____ Approved by _____

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 4

J-70 LSD SEC. TWN. RGE. W. Contractor *Imperial Oil* Type Rig *Taylor* Month *Mar* 23 Day *23* 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m. 2nd Tour From: 8:00 a.m. To: 4:00 p.m. 3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH	1st Tour From: 12:00 Midnight To: 8:00 a.m.					2nd Tour From: 8:00 a.m. To: 4:00 p.m.					3rd Tour From: 4:00 p.m. To: 12:00 p.m.													
	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation									
	467	592	6 3/4	6 3/4	SHALE	592	722	130	6 3/4		722	990	168	6 3/4										
DRILLING STRING	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.						
	3 1/2	4	1	23.54	300.22		3 1/2	6	1	19.744	300.22		3 1/2	9		3	300.22							
	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL						
	COLLAR	10	4 1/4	2 1/4	300.22	DRILLING STRING	DRILL COLLARS	COLLAR	10	4 3/4	2	300.22	DRILLING STRING	DRILL COLLARS	COLLAR	10	4 3/4	2	300.22	DRILLING STRING	DRILL COLLARS			
DATA							DATA																	
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE
	28	OSC-6			1 1/2			282	3	OSC-6			1 1/2	6 1/2	4	336	4	OSC			1 1/2	6 1/2	4	244
	Bit Serial No.	5820	Table R.P.M.	150	Bit Serial No.	5820	Table R.P.M.	150	Bit Serial No.	2992	Table R.P.M.	150	Bit Serial No.	2992	Table R.P.M.	150	Bit Serial No.	2992	Table R.P.M.	150	Bit Serial No.	2992	Table R.P.M.	150
	Jet or Conventional		Nozzle Size		Jet or Conventional		Nozzle Size		Jet or Conventional		Nozzle Size		Jet or Conventional		Nozzle Size		Jet or Conventional		Nozzle Size		Jet or Conventional		Nozzle Size	
SURVEYS	Kind	S.S.	at	522 - 553 Ft.	2 1/4 - 2 1/4 Deg. off	Kind	S.S.	at	646 Ft.	1 1/2 Deg. off	Kind	S.S.	at	773-832 Ft.	1 1/2 - 1 Deg. off									
	HOURS	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size			
	No. 1	7 1/4		400	12"	72	5 1/2	No. 1	6 3/4		400	12"	72	5 1/2	No. 1	9 1/2		600	12	92	5 1/2			
	No. 2							No. 2							No. 2									
MUD RECORD	Time	Visc.	Wt.	W L	pH	ADDITIVES - POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES - POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES - POUNDS						
	12:00	28	8.6				8:00	30	8.5				4:00	28	8.7									
	2:00	28	8.8				10:00	29	8.5				6:00	28	8.7									
	4:00	28	8.6				12:00	28	8.6				8:00	28	9.0									
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.						
DETAIL OF OPERATIONS AND REMARKS	From	To	Hrs.	From	To	Hrs.	From	To	Hrs.															
	Rig Serv	12:00	12:15	1/4	DRILL 6 3/4 Hole	8:00	8:45	3/4	DRILL	4:00	4:45	2 3/4												
	DRLG	12:15	3:00	2 3/4	SERVICE + CHECK B.O.P.	8:45	9:00	1/4	Rig SERVICE + SURVEY	6:45	7:00	1/4												
	SURVEY @ 522 - 2 1/4	3:00	3:15	1/4	DRILL 6 3/4 Hole	9:00	11:00	2	DRILL	7:00	9:30	2 1/2												

Driller *Ed Lamb* Driller *H. J. Jandl* Driller *J. M. BART*

CLASSES OF TIME BREAKDOWN
HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY
DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: HOSE SERIAL No. YES NO
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE

Total Contract Time _____ hrs. Total Company Time _____ hrs. Toolpusher _____ Approved by _____

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 2J-70 LSD SEC. TWN. RGE. W. Contractor Imperial Oil Ltd. Type Rig Landrig Month April Day 22 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.										2nd Tour From: 8:00 a.m. To: 4:00 p.m.										3rd Tour From: 4:00 p.m. To: 12:00 p.m.																			
DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation				DEPTH		From	To	Hole Made	Hole Size	Formation													
												310	310	-	6 3/4							310	469	157	6 3/4														
DRILLING STRING		Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.				Size-D.P.		Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.				Size-D.P.		Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.												
													3 1/2				300.22							3 1/2	2	1	25' up	300.22											
DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL				DRILL		Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL													
COLLAR						DRILLING STRING				COLLAR		10	4 3/4	2"	200.22	DRILLING STRING				COLLAR		10	4 3/4	2	200.22	DRILLING STRING													
DATA										DATA						24000	10.500				DATA							2911											
BIT RECORD		No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		No.		Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE		No.		Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE										
									Drilled	Reamed										Drilled	Reamed									Drilled	Reamed								
													3	OSC-16										3	OSC-16														
		Bit Serial No.					Table R.P.M.							Bit Serial No. 5820					Table R.P.M.							Bit Serial No. 5820					Table R.P.M. 150								
		Jet or Conventional -					Nozzle Size							Jet or Conventional -					Nozzle Size							Jet or Conventional - Conv.					Nozzle Size								
SURVEYS		Kind	at		Ft.		Deg. off		Kind		at		Ft.		Deg. off		Kind		at		Ft.		Deg. off		Kind		at		Ft.		Deg. off								
HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS		On Line		Circulating		Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1																																							
No. 2																																							
MUD RECORD		Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS				Time		Visc.	Wt.	W L	pH	ADDITIVES — POUNDS				Time		Visc.	Wt.	W L	pH	ADDITIVES — POUNDS												
																		CHECKED MOTOR SHUT OFF												BIGARB - 500#									
																														DISPLACE HOLE 11:00 - 11:30 1/2									
																														DIRTY 11:30 -									
CORING		From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.				From		To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.				From		To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.												
																		PRESSURED HEAD & CASING TO 1000# PSI FOR 10 MIN.											PRESSURE HELD										
DETAIL OF OPERATIONS AND REMARKS				From	To	Hrs.							From	To	Hrs.							From	To	Hrs.															
		WOC -		12:00	2:30	2 1/2	Head up. Run in Hole.						8:00			DRILL						4:00	4:45	3/4	DRILL														
		HEAD UP B O D		2:30	8:00	5 1/2	Pressure up.							2:30	6 1/2		RIG SERVICE & TIGHTEN SWIVEL						4:45	5:00	1/4	RIG SERVICE & TIGHTEN SWIVEL													
							DRILL out Cement +									DRILL						5:00	8:00	3	DRILL														
							FLOAT equipment.							3:15	3/4		WORK - Plug Ring						8:00	8:15	1/4	WORK - Plug Ring													
							Displace hole with Fresh							3:15			TRIP TO CLEAN HOLE						8:15	8:45	1/2	TRIP TO CLEAN HOLE													
							WATER.							4:00	3/4		SURVEY @ 460'						8:45	9:00	1/4	SURVEY @ 460'													
																PUMP DOWN PIT						9:00	9:30	1/2	PUMP DOWN PIT														
																WORK ON PUMP						9:30	10:00	1/2	WORK ON PUMP														
																TRIP FOR Plug Bit & UNPLUG						10:00	11:00	1	TRIP FOR Plug Bit & UNPLUG														
Driller		<u>Ed. Lenz</u>				Driller				<u>H. J. Jandl</u>				Driller				<u>Jim. Byrt</u>																					

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY

DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE HOSE SERIAL No. YES NO

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: YES NO

Total Contract Timehrs. Total Company Timehrs. Toolpusher Approved by

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 2

J-70 LSD SEC TWN RGE W

Contractor IRI - CITY DRILLING Type Rig Lucas 8" Stand Month March Day 21 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH	1st Tour From: 12:00 Midnight To: 8:00 a.m.					2nd Tour From: 8:00 a.m. To: 4:00 p.m.					3rd Tour From: 4:00 p.m. To: 12:00 p.m.														
	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation										
	160	310	150'	12 1/4		310	310	-																	
DRILLING STRING	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.							
				35.80	274.66	4 7/8																			
	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL							
	COLLAR	10	4 1/2	2 1/4	274.66	DRILLING STRING	DRILL COLLARS	COLLAR					DRILLING STRING	DRILL COLLARS	COLLAR										
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE	
								Drilled	Reamed								Drilled	Reamed						Drilled	Reamed
	37	Y73	9 30		7 3/4				180																
SURVEYS	Bit Serial No.	Table R.P.M.					Bit Serial No.	Table R.P.M.					Bit Serial No.	Table R.P.M.											
	Jet or Conventional -	Nozzle Size					Jet or Conventional -	Nozzle Size					Jet or Conventional -	Nozzle Size											
	Kind	S.S.	at	160 Ft.	1/2 Deg. off		Kind	at	Ft.	Deg. off		Kind	at	Ft.	Deg. off										
	HOURS	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size				
MUD RECORD	Time	Visc.	Wt.	W L	pH	ADDITIVES - POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES - POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES - POUNDS							
	1200	35				CAUSTIC = 100#																			
	2	35					RAN 7 JTS 290.66' 8 5/8 J 55																		
	4	35					24# BTHD STHD R-3 MANNESMANN																		
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.							
DETAIL OF OPERATIONS AND REMARKS	From	To	Hrs.	From	To	Hrs.	From	To	Hrs.																
	1200	1215	1/4	1215	215	2	1200	1000	2																
	215	300	3/4	300	345	3/4	1100	1130	1/2																
	345	400	1/4	400	700	3	1130	1145	1/4																
DETAIL OF OPERATIONS AND REMARKS	700	715	1/4	715	730	1/4	1145	115	1/2																
	730	800	1/2	800			115	145	3/4																
							145	230	3/4																
							230	400	1 1/2																

Driller: Ed. LandlDriller: H. LandlDriller: Jim B. B.

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No. DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY

DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE HOSE SERIAL No. YES NO

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

Total Contract Timehrs.

Total Company Timehrs.

Toolpusher

Approved by

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT No. 1

IOE TRIAD EBBUTT

LSD

SEC. J

TWN. 70 RGE.

W.

Contractor T.B. CITY

Type Rig

Month MARCH Day 20 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH	1st Tour From: 12:00 Midnight To: 8:00 a.m.					2nd Tour From: 8:00 a.m. To: 4:00 p.m.					3rd Tour From: 4:00 p.m. To: 12:00 p.m.														
	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation										
	0	41	41	12 1/4		41	100	59	12 1/4		100	160	60	12 1/4											
DRILLING STRING	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.							
				2' up		SUBS 4.74				-	59-58	SUB 4.74				30' up	149.4	SUB 4.74							
	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL							
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M. Pounds	FOOTAGE	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M. Pounds	FOOTAGE	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M. Pounds	FOOTAGE	
	1A	YT-3			3			40	2A	YT-3			8			ALL 60	2A	YT-3			8:30	12	130	300	90
	2A	YT-3			3 1/4			1										3A	YT-3	9:30		2		600	30
	Bit Serial No. 1A - Run 2A. EN 2393 Table R.P.M.						Bit Serial No. EN 2393 Table R.P.M. 120						Bit Serial No. 2A EN 2393 3A EN 2392 Table R.P.M. 140												
	Jet or Conventional -						Jet or Conventional - Conv.						Jet or Conventional - Conv.												
SURVEYS	Kind	at	Ft.	Deg. off			Kind	at	Ft.	Deg. off		Kind	at	Ft.	Deg. off										
PUMP RECORD	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size							
MUD RECORD	Time	Visc.	Wt.	W L	pH	ADDITIVES - POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES - POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES - POUNDS							
	6:00	33				Gel 1400	10:00	34					4:00	35											
						CAUSTIC - 100	12:00	35					6:00	35	95										
							2:00	35					8:00	35											
													10:00	35											
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.							
DETAIL OF OPERATIONS AND REMARKS	From	To	Hrs.	From	To	Hrs.	From	To	Hrs.																
	12:00	2:15	2 1/4	8:00	9:30	1 1/2	4:00	4:15	1/4																
	2:15	2:30	1/4	9:30	11:30	2	4:15	4:30	1/4																
	2:30	5:00	2 1/2	11:30	11:45	1/4	4:30	8:30	4																
	5:00	5:45	3/4	11:45	1:00	1/4	8:30	9:00	1/2																
	5:45	6:15	1/2				9:00	9:30	1/2																
	6:15	6:30	1/4				9:30	11:30	2																
	6:30	7:15	3/4				11:30	12:00	1/2																
	7:15	8:00	3/4																						

Driller. ED LAMB

Driller. HANS JANDL

Driller. Jimm B...

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE REEL SERIAL No.

DRILLING: FISHING: TRIPPING: W.O.C. W. O. ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE HOSE SERIAL No.

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: PREVENTER EQUIPMENT TODAY

Total Contract Timehrs. Total Company Timehrs. Toolpusher Approved by